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**AN EXPLORATION OF LEARNING:
BEGINNING TEACHERS BUILDING KNOWLEDGE ABOUT
CULTURE AND LITERACY**

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by

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Thanks so much Matt, Connor, and Callum for letting mommy disappear for vast
amounts of time so I could work my “desert-ation.” I dedicate this to you
with all my love.

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A dissertation usually carries only one author's name, but that just seems so unfair. I have to thank so many people for helping to create this study and seeing it through to this report. Thanks to my dissertation's grandma, Jo, for taking care of it and me as I struggled to put my ideas into comprehensible form. Jo, your knowledge, craftsmanship with writing, and friendship have meant so much to me. Thank-you to all of the participants—you welcomed me into your course and discussed your learning candidly and thoughtfully “after-hours.” I have learned so much from you all. Lauren, thank you, for offering up your course as a place where I could learn. You have been a wonderful friend and role model to me. To all of my committee members, I think of you like the aunts and uncles of this study. Your courses fed my curiosity, and your thoughtfulness and knowledge humbles me. Thanks so much for giving this study thoughtful critique and helping me to make it better. And especially thanks to Diane Schallert, who responded to my frantic messages and met with me to talk shop about learning theory when I needed it most. Of course, any crazy assertions are purely my own doing—these folks are not to blame.

**AN EXPLORATION OF LEARNING:
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The purpose of the study was to explore what and how teachers learn in a course that integrates topics about reading and writing methods for instruction with socio-political issues related to culturally responsive education (as advocated by Sleeter, 2001). Eight beginning teachers participated in this qualitative study in which the researcher acted as participant-observer in their teacher education course titled, “Literacy Methods for Culturally and Linguistically Diverse Students.” Research questions that guided the study inquired what and how do the teachers learn. In-class observations and field notes, class artifacts, out-of-class focus group transcripts, and individual interviews provided data for inductive and deductive analyses (Glaser & Strauss, 1967; Strauss & Corbin, 1991). Conceptual modeling was used to represent the teachers’ cognitive processing of course related information (Britt, 1997). Two case studies offer individualized accounts of the learning process. Findings indicate that teachers’ learning began with dialogic echoing of course-related ideas and could proceed as teachers integrated those ideas within their own conceptions about culture, literacy, relational connections, and equitable

educational opportunities, and conceptual mapping shows how this cognitive process took place. Study findings also suggest that learning takes place when sources for knowledge are acknowledged and accepted by learners and when those sources are the subject of response and cognitive tension and/or integration. Viewing learning as a developmental process as well as an on-going, reciprocal process of understanding aided in the examination and description of data. Further examination of courses integrating methods instruction and socio-political agendas is necessary.

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CHAPTER ONE

INTRODUCTION

Teachers in the U.S. are increasingly working with children who come from multiple cultural backgrounds (National Center for Education Statistics, 2001). In a survey of 3,560 public school teachers, only about 20% of teachers who work with culturally and linguistically diverse students felt prepared to address their needs (National Center for Education Statistics, 1998, retrieved on Sept. 30, 2004, from <http://nces.ed.gov/surveys/frss/publications/1999080/6.asp>). Much is expected of teachers who enter classrooms today. Not only are they asked to know the technical methods of teaching (Moje & Wade, 1997), but they are also asked to negotiate among methods and adjust instruction to meet each student's learning needs while also maintaining a culturally responsive classroom atmosphere and curriculum (Montecinos, 1995).

In response to what is being expected of teachers, teacher educators are attempting to integrate new understandings about the value of diversity and cultural responsiveness into teacher preparation. Several researchers of teacher education (Banks, 1991; Banks & Banks, 1997; Nieto, 2002; Sleeter, 2001) claim that add-on courses about cultural sensitivity—outside the traditional content-area methods courses—are not enough. Instead, they suggest that cultural sensitivity and responsiveness must be integrated into content-area methods courses so that beginning teachers can construct ideas about how to teach a content-areas like reading and literature as well as, simultaneously, about culturally sensitive and responsive instruction. In her review of the last 15 years of research on multicultural teacher education, Sleeter (2001) reviewed a

number of studies of such courses (e.g., Alquist, 1991; Clark & Medina, 2000; Lawrence, 1997; Xu, 2000). Sleeter noted that all of the studies were small-scale, action research and/or narrative descriptions of what methods and practices were effective (or “worked” or not effective (or what “did not work”).

As a beginning teacher educator, I am interested not only in what works but in how and why. What happens in that space between the research report of effectiveness and the learners who participated in that course? In order to understand more about teacher education, I wanted to study a course like one that proponents of multicultural teacher education advocate and one that I would likely teach—an integrated literacy and multicultural education course. To frame my study, I had to think about what I value most as a teacher—and that is learning. I decided to look to theories of learning to understand more about teacher education. Upon looking for theories of learning that have been used to frame research on multicultural literacy teacher education, I was disappointed. Most of the recent studies focused on transformative learning and pedagogy, or, as Sleeter had found, were limited to narratives of what learners said about “effective” methods. None seemed to guide attention toward the learners themselves.

The study described in this dissertation focused on what and how beginning teachers learn as they build knowledge about culturally responsive literacy instruction during a semester in which they were enrolled in a course called, “Literacy Methods for Culturally and Linguistically Diverse Students.”

This dissertation is not a search for what is “effective,” but rather what happens when beginning teachers encounter a course that uses methods that some researchers

might describe as effective (Anders, Hoffman, & Duffy, 2000; Banks & Banks, 1997; Schmidt, 2001; Sleeter, 2001). Therefore, I begin by describing some of the methods built into the course design that some researchers have called effective. The professor flooded the members of the class with sources (Scardalamia & Bereiter, 1996) including readings from multiple authors, guest speakers, and video documentaries of minorities' experiences. Each source represented unique perspectives, and on the whole these sources were highly inclusive of minority viewpoints (as advocated by, for example, Au, 1998; Nieto, 2002; Sleeter, 2001). She maintained a steady, caring, open-ended approach to discussions (c.f. Alquist, 1991). She developed lessons and assignments in which members were asked to integrate theory and practice. These tasks included reflective writing (Anders, 1991; Hollingsworth, 1994), writing personal narratives (Bean, 1994; Brown, 1999; Florio-Ruane, 1997) by way of the ABCs model (Schmidt, 2001) and writing a literature unit, both of which required members to explain their knowledge, construct original ideas about course-related topics (e.g., culture, literacy) (Bereiter, 2002; Bruner, 1986), and apply their learning to instructional practice. She helped to raise class members' awareness of the need to compare their intuitive knowledge to the knowledge presented within the course by using graphic representations such as T-charts and matrices (McFalls & Cobb-Roberts, 2001). She also provided explicit teaching about particular topics, including racism, discrimination, White privilege, social justice, and critical pedagogy (Sleeter, 1995) and provided time for peer discussions,

To understand how beginning teachers might learn in a course like this, I examined several theories of learning that have been studied in multiple fields (beyond

just teacher education). I began with Bereiter's (2002) theory of Knowledge Building because it proposes that the development of domain knowledge (Alexander, Schallert, & Hare, 1991) can be on-going, as is the case in teaching (Ehri & Williams, 1996).

Knowledge Building is the deep understanding of information that leads to new learning about particular domains of knowledge (Bereiter, 2002). As knowledge builders, humans determine the value of information, manipulate and apply various pieces of information in different contexts, and reconsider the information we think we know, critique it, and negotiate it. I have also pulled from other theories and studies of teacher education that seem integrally related to my research questions: conceptual change theory, transformative learning theory, expert learning theory, and theories about understanding. Taken together, these theories provided a lens for understanding how these beginning teachers learned in this class.

Purpose for the Study

The purposes for this study were to explore how beginning teachers learn in a course dedicated to marrying the aims of multicultural education (e.g., culturally sensitive and responsive instruction, critical pedagogy, social justice [Nieto, 2002]) to literacy-related, content-area instruction and to provide empirical evidence to build upon theories of learning and understanding as they relate to teacher education. Research questions that guided the study are:

- What are the teachers' conceptions about course-related topics? How do their conceptions shift across topics?

- What are the processes through which the teachers' conceptions shift during the semester?
- What are individual differences in teachers' learning and processing in a course?

Literature Review Overview

The literature review begins with an overview of studies that suggest some of the purposes and approaches to culturally sensitive teacher education. Several studies (e.g., Allen & Labbo, 2001; Barton, 1999) and a review of literature (Sleeter, 2001) suggest that one way to help teachers be culturally sensitive in their instruction is by integrating methods courses (e.g., reading methods, social studies methods) with explicit instruction and discussion about racism, discrimination, social justice, critical pedagogy, and cultural practices (Nieto, 2002; Sleeter, 2001). As an investigation of a course that fits this description, this study seeks to describe what and how teachers learn in a graduate-level course when instruction about more technical aspects of teaching reading and writing are integrated with instruction about multicultural education. Teachers' learning can be described as Knowledge Building.

Next in the literature review, I compare Constructivist and Connectionist theories of learning and explain how these theories can be used with developmental theories of learning as well as typological theories of understanding. Constructivists explain learning as an individualized process of idea construction (Bruner, 1986; Piaget, 1977) with a focus is on the content of those ideas (put simply, the *what*) (e.g., Anderson, 1977). In contrast, when Connectionists (e.g., Clark, 1993; Rumelhart, 1991) describe learning, they consider *how* conceptions are processed in the mind. Using a Constructivist model

helps to explain learning as a developmental process—not an age-specific, but a phase-specific process (e.g., Mezirow, 1991). Using a Connectionist model helps frame learning as a process of connections that occur within the mind. Thus, a Connectionist framework allows us to place the content of conceptions upon a metaphorical shelf and focus on *how* those conceptual artifacts were processed. For this study, I took aspects of both Constructivist and Connectionist theories to develop a model for learning that includes processing of conceptions as essential to the construction of conceptions. I chose Bereiter's (2002) notion of Knowledge Building as a framework in this study to illustrate how learning occurs not through the accumulation of conceptions but as a process by which conceptions are created, integrated, negotiated, connected by a learner.

Developmental theories of learning. I compare and contrast Knowledge Building with several Constructivist learning theories that explain learning as a developmental process: Transformative Learning (e.g., Ada & Campoy, 2004; Florio-Ruane, 2001; Mezirow, 1991, 1998; Mezirow & Associates, 2000; Schmidt, 2001), Conceptual Change (e.g., Duit & Treagust, 2003; Guzzetti & Hynd, 1998), and Expert Learning (e.g., Bereiter, 1997, 2002; Langer, 1997; Spiro, Coulson, Feltovich, & Anderson, 1988). Each of these theories provides a framework to illustrate teachers' learning as a developmental process from beginning to end. Like each of these theories, Knowledge Building has similar events/outcomes: to change concepts and/or to use knowledge expertly/flexibly. The main differences between Knowledge Building and these other theories are (1) Knowledge Building lacks the same focus on endpoints for learning; (2) Knowledge Building considers learning as a process of connecting concepts rather than simply

constructing them one at a time; however, (3) Knowledge Building is a newly developed theory with little empirical evidence directly related to teacher education. Nonetheless, the focus of research in teacher education needs to go beyond just *what* works and what is understood by a learner; it needs to include an examination of *how* understanding takes place.

Typological theories of understanding. In addition to developmental theories of learning, theories about “understanding” help us to conceive of learning as a process with no developmental endpoint. Theories of understanding are often related as typologies with little regard for outcomes or correlation among the various types of understanding. I review three theories that are typologies for understanding: paradigmatic and narrative understanding (e.g., Bruner, 1986, 1990), Egan’s (1997) categories of mythic, romantic, philosophic, and ironic understanding, and learning styles (e.g., Lockhart & Schmeck, 1983; Schmeck & McCarthy, 1982). Each of these theories of understanding aims to describe how learners come to understand, regardless of the content or end result of learning. Some also show individual differences as well as how people come to understand in multiple ways, even simultaneously.

Methods Overview

The study took place during a semester in which eight beginning teachers were enrolled in a masters-level course titled “Literacy Methods for Students of Culturally and Linguistically Diverse Students” at a state college in south western U.S. Multiple methods were used to collect qualitative data. I acted as a participant-observer and collected field notes (including reflective notes about my own learning and participation)

during the class sessions. I collected artifacts from the course such as online responses and assignments. Seven members from the class participated in four focus group meetings held outside of class time during the semester. I conducted follow-up interviews about a month after the course ended to ask each focus group member about what and how they learned from the class. Using their statements offered in and out of class, I analyzed participants' language to infer how and what they were learning.

Data analysis was on-going (Glaser & Strauss, 1967) and involved coding and recoding of categories (Strauss & Corbin, 1990, 1998) from the members' talk and writing as well as from my own field notes. Analyses of online responses and field notes were used to prompt lines of inquiry for the focus group meetings. Analyses of focus group data, along with the field notes and class artifacts, were used to construct prompts for the follow-up interviews. Upon completion of data analysis, the full data set was used to create categories to describe what members of the class learned, how their conceptions (related to the course goals and content) changed and how learning took place. I created conceptual maps (Britt, 1997) by using the members' spoken and written language across contexts to represent my analysis of how members came to understand concepts related to the course. Case studies were developed for two of the members to show these individuals' passages to understanding.

Significance of the Study

Unlike studies of teacher education that address the effectiveness of integrated multicultural education courses, this study explores both what and how teachers learn in a course incorporating methods that are considered to be effective (Anders, Hoffman, &

Duffy, 2000; Au, 1998; Sleeter, 2001). Connectionist and Constructivist theories, developmental theories of learning, and typologies of understanding are considered together to provide a new lens through which to perceive what and how learning took place.

Organization of the Study

This study is presented in seven chapters. Chapter One describes the problem and questions that guide the study. In Chapter Two, I present relevant literature that informs the study. Chapter Three includes information about the research methods, data collection, and data analysis. In Chapters Four, Five, and Six, I present the findings related to the three research questions. Chapter Four addresses the teachers' conceptions about culture and literacy related to literacy instruction. Chapter Five addresses the processes through which teachers' conceptions shifted. Chapter Six presents two case studies of how two individual teachers' conceptions shifted during the course. A summary, discussion of limitations, and a discussion of all of the findings and implications of the study are presented in Chapter Seven.

Definitions of Terms

The following is a list of terms and definitions used in this study. The terms are ordered alphabetically and are included to assist in clarifying specific vocabulary in this report:

Conceptions: Individual ideas that can be thought of as the building blocks that come together to create a socially shared idea or concept.

Concepts: General ideas that can be thought of as socially shared ideas about particular topics.

Conceptual: Of or having to do with the process of thinking.

Conceptual maps are presented in the study as a means of illustrating my understandings of the data and to aid with the interpretation of findings.

Multicultural education: Borrowing from Banks and Banks (1997, pp. 3-4):

Multicultural education is at least three things: an idea or concept, an educational reform movement, and a process. Multicultural education incorporates the idea that all students—regardless of their gender and social class and their ethnic, racial, or cultural characteristics—should have an equal opportunity to learn in school. Another important idea in multicultural education is that some students, because of these characteristics, have a better chance to learn in schools as they are currently structured. ... Multicultural education is also a reform movement that is trying to change the schools and other educational institutions so that students of all social class, gender, racial, and cultural groups will have an equal opportunity to learn. ... Multicultural education is a process whose goals will never be fully recognized. Educational equality, like liberty and justice, are ideals toward which human beings work but will never fully attain.

CHAPTER TWO

LITERATURE REVIEW

In this review of the literature, I describe how several teacher educators have attempted to integrate multicultural education initiatives and methods into their literacy-related content methods courses for beginning teachers to support culturally responsive pedagogical learning. I note that most studies of multicultural teacher education have focused primarily on *what* each beginning teacher learned and whether or not the teachers “got it” by the end of the course. I suggest that learning might be viewed as a process of Knowledge Building rather than as a linear beginning and end.

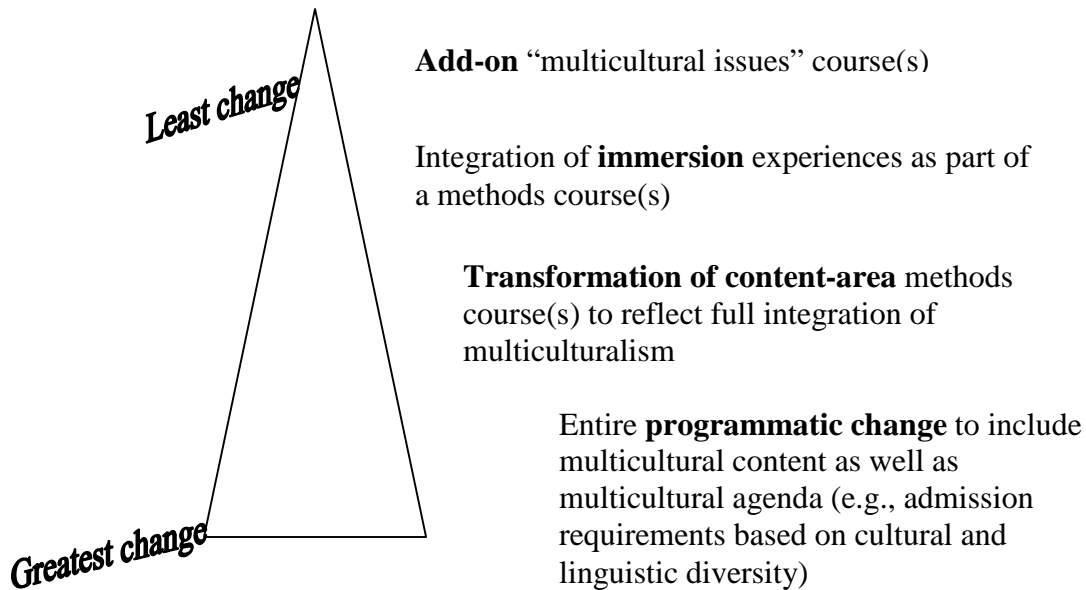
Then I describe Constructivist (Bruner, 1986; Piaget, 1977) and Connectionist (Clark, 1993; Rumelhart, 1991) models for learning and relate them to Knowledge Building (Bereiter, 2002). I depict several constructivist and phase-specific, theories of learning: transformative learning, conceptual change, expert and mindful learning. Each is an example of a developmental theory of learning and can be depicted by a linear progression as represented by a vertical line—first the learner began at the bottom and then he rose to the top through a series of steps, each step dependent on the last. In typologies of understanding, each type (or “way of knowing”) is represented as a uni-dimensional category independent of the other and little is said about how these “ways” might influence each other. Therefore, theories of understanding might be best represented as a horizontal dotted line, each dot representing a separate and independent means for understanding. I describe several theories of understanding, including narrative and paradigmatic understanding (Bruner, 1986; Piaget, 1977), Egan’s (1997) four

categories for understanding (Mythic, Romantic, Philosophical, and Ironic), and learning styles (Lockhart & Schmeck, 1983). Taken together, developmental theories of learning and theories of understanding offer new ways to conceive of learning as a process of Knowledge Building. Knowledge Building (Bereiter, 2002) is a theory used to describe learning using both Constructivist and Connectionist frameworks.

Creating Culturally Sensitive Teacher Education

Banks (1997) suggested that “multicultural education” can take many forms; however, he advocated that at its core rests the need for teachers to be aware of, sensitive to, and responsive to their students’ cultural backgrounds as they create and implement classroom instruction. Teacher educators have thought about ways to embrace these ideals of multicultural education (e.g, Au, 1998; Banks, 1997; Banks & Banks, 2000; Sleeter, 2001; Clark, 2002). After reviewing over 100 studies about strategies for teacher education, Sleeter (2001) described the ways in which teacher educators incorporate multicultural education to different degrees. We can think of these degree differences in terms of the amount of “change” to traditional programs. If thought of as a triangle, the levels of change from “traditional” to “multicultural” might be conceived as in Figure 2.1:

Figure 2.1. Multicultural education as degrees of change from traditional teacher education.



Conflicts exist, however, as to which level of change is the best way to address teachers’ understanding of culturally relevant teaching. Add-on courses and out-of-context immersion experiences can cause cognitive dissonance for teachers who might understand the need for cultural responsiveness but who have not seen it as integral to their understanding of the technical aspects of teaching offered in content-area courses (McFalls & Cobb-Roberts, 2001). This cognitive dissonance can make teachers resistant to addressing diversity issues in their own (future) classrooms (e.g., Alquist, 1991; Barton, 1999; Lawrence, 1997; McFalls & Cobb-Roberts, 2001; Moje & Wade, 1997). Sleeter concluded that immersions are rarely an effective means for creating culturally responsive teachers unless the experiences are paired with multicultural content-area methods instruction and integrate thorough discussions of culturally related issues. Even

more importantly, there is evidence that add-ons and cultural immersion experiences that are unrelated to content-area methods coursework have the potential to do more harm than good. Some teacher educators (e.g., Haberman, 1987; Ladson-Billings, 2001; Molseed, 2000) believe that only the greatest amount of change will be effective; thus they advocate creating entirely new programs developed specifically for addressing the needs of particular student populations (e.g., Black students, students from low-income families). However, most teacher educators' reality is that our work usually takes place in traditionally organized, state-sponsored (thus highly bureaucratic and somewhat immutable) university-based programs that already place thousands of teachers into the work force each year (National Center for Accreditation of Teacher Education, 1999, retrieved on Sept. 30, 2004, from <http://www.ncate.org/resources/factsheettq.htm> and National Center for Educational Statistics, 1999, retrieved on Sept. 30, 2004, from <http://nces.ed.gov/surveys/frss/publications/1999080/6.asp>). The reality of state-sponsored university-based teacher preparation makes entire programmatic change and/or ethnically specific admission requirements less likely. How then might traditional university-based programs be reorganized and altered to better prepare teachers to implement culturally sensitive and responsive pedagogy?

Perhaps an effective means for effectively transforming traditional content-area instruction is by integrating pedagogic understandings about the need for cultural responsiveness and sensitivity into content-area courses (Banks, 1991; Banks & Banks, 1997; Sleeter, 2001); this is the type of course that serves as the focus for this study. Several researchers have described how this might look in the pre-service English

Language Arts methods courses. For example, in an action teacher research study, Fry and McKinney (1997) analyzed dialogue journals, class discussions, and surveys, and interviewed ten White, female student teachers who taught in a culturally diverse school setting as part of a multi-culturally focused language arts methods course. Through the use of personal biographies and reflective teaching, the students became more sensitized and willing to create culturally relevant curricula; however, the authors indicated little change in the student teachers' understanding of what makes up the Language Arts. At the end of the course, these same student teachers rated themselves as "maybe prepared to teach culturally different children" (p. 197). Similarly, Allen and Labbo's (2001) teacher research study of their culturally relevant, pre-service language arts methods course is another example of multicultural content-area education in which curricular content was transformed. Using photographic and written cultural memoirs, Allen and Labbo's 27 pre-service teachers gained a fuller understanding of their own cultures. Their course also involved self-reflective journal-keeping, long-term immersion in on-site tutoring, and a transformed Language Arts curriculum which included photography, memoir, and critical cultural self-analysis. After analyzing their own field notes about the course and students' assignments, Allen and Labbo described these "students-becoming-teachers" as having a dawning commitment to culturally responsive education. Allen and Labbo stressed the need for comprehensive change in their courses: the course setting, assignments, texts, and curriculum were all transformed to become more culturally focused and engaging (for their student-teachers as well as for their student-teachers' students).

There are several rich descriptions of creative efforts to transform teacher education programs and testimonials to the positive outcomes of these changes (e.g., Allen & Labbo [2001] and Fry & McKinney [1997] in language arts education and Barton [1999] in science education). Most of the studies involving such courses describe instructional content but fall short in examining individual teachers' learning as they move through "becoming sensitive to cultural issues" (a phrase common to multicultural education discourse) toward acting upon these sensitivities and changing instructional practices. Close examinations of teachers' learning could portray a complex process rather than a unidimensional movement from course content to teachers' knowledge (or not, as the case might be). Perhaps this is a necessary step if we want to expand our understandings about nurturing teachers' learning about culturally responsive instruction. In addition, the vast majority of studies on teacher education regarding the development of culturally responsive pedagogical knowledge have been conducted by teacher-researchers, thus, other researcher roles should be explored (Sleeter, 2001). While most teacher-research studies are probably dependable portrayals of course content and student outcomes, they should be accompanied by studies using a variety of researcher roles and focusing on teachers' learning processes to more fully understand how to prepare literacy teachers to work in culturally and linguistically diverse communities. As a researcher in the roles of observer-participant, focus group facilitator, and interviewer, I looked toward theories of learning to frame my inquiry about how beginning teachers learn in a course dedicated to marrying the aims of multicultural education and literacy instructional methods.

Constructivist and Connectionist Models of the Mind and Meaning Making

Piaget (1977), perhaps one of the most well-known Constructivists, articulated how individuals construct realities based on their developmentally mediated interactions with the environment. Bransford and his colleagues (Bransford & Johnson, 1972; Bransford, 1979, 1984) and early schema theorists (e.g., Anderson, 1977) provided the groundwork for constructivist theories. Constructivists argue that learners do not “receive” concepts, but that they construct conceptions (or ideas) within their own minds. This theory can lead one to think of the mind as a container for ideas. Additionally, those constructed ideas are likely to have a family resemblance to the original source of ideas. In fact, this is often the goal for learning—to create an idea that resembles the source. In most cases, it is not a bad goal. For example, a novice teacher learning about how to teach physics should construct conceptions that closely resemble scientific theories and to understand how those theories might relate and be taught through techniques such as demonstration, explanation, and experimentation. Likewise, we would not want a novice teacher learning to teach writing via a process approach (e.g., Caulkins, 1994; Graves, 1996) to construct an idea that diverges significantly from it. This is part of learning. We want novice teachers to learn about many approaches, constructing their own conceptions about teaching that familiarly resemble concepts presented by other teachers and researchers who have built them knowledgeably.

In some ways, this is similar to Reynolds’ (1989) suggestion that there is a “knowledge base” for teaching that beginning teachers should be abreast of before entering their own classroom. For example, researchers interested in science teacher

preparation have used this idea for at least a decade to couch their studies of conceptual change. In those studies, science education researchers try to track whether or not pre-service teachers understand the knowledge base for science education (e.g., Newton's Einstein's laws). We might say that literacy teacher preparation has a similar knowledge base. Literacy teachers need to know how to assess student's literacy development and how to teach reading skills and strategies, to support writers as they develop, to help students know and appreciate words and language, and to support the development of students' literary understandings (among other topics). Although the knowledge base for literacy education seems a bit more broadly defined than for science education (science teacher education seems more focused on content-area information; whereas, literacy education seems more focused on instructional techniques for supporting literacy development), it is present (although arguable in any field). And novice teachers who emerge from institutions that value teacher education as a process of initiation into these knowledge bases will be stronger classroom teachers (Darling-Hammond, 1996; Darling-Hammond et al., 1995; IRA, 2002; NCTAF, 1996).

However, students do not need teachers who just use their knowledge base to simply explicitly reconstruct ideas, accumulate information, or perfectly execute the steps of prescribed lessons; instead, students need teachers who learn about instructional approaches so that they can use them flexibly and creatively modify approaches to fit their classroom context and students' needs. This involves not just explicit knowledge of instructional methods, but also content knowledge (formal and informal) of the context and students involved (Alexander, Schallert, & Hare, 1991). It involves knowledge such

as classroom management skills and the ability to remember and apply knowledge about one case and to apply that knowledge to future classroom situations. Knowledge Building (Bereiter, 2002) is essentially a Constructivist theory of learning, but it also entails some way for a learner to process information by judging the usefulness of information, manipulating information creatively. A teacher does this regularly to meet the needs of her students, flexibly switching among instructional or management approaches and seeking new ways to teach. Teachers involved in building knowledge do not simply construct meanings about information, they understand information deeply.

The idea that learning occurs when information is processed echoes Connectionist theories of learning (e.g., Clark, 1993; Rumelhart, 1991; Rumelhart, McClelland, et al., 1986). Connectionist theories of learning are championed by researchers of artificial intelligence as a way to identify the processes by which bits of information connect and translate as they activate each other recursively. That is, rather than look at the mind as a container for propositions as Schema theorists and Constructivists do, Connectionist theorists use the brain as a metaphor for the mind. The brain does not expand like a container would as more information is taken in. Instead, the brain shows increased synaptic activity—more connections. Also the brain utilizes connections efficiently by weighing some bits of information more than others, thus information reciprocally informs to not just what should be recalled but how it should be recalled. Therefore, Connectionist theory includes a representation of the mind: interconnected processing units, rules for activating the connections, rules for learning (so that the connective patterns can be modified with experience), and the allowance of decay (or what we might

call forgetting). Connectionist theories can also be applied to teacher learning when we consider learning to be a process of deep understanding.

Developmental Theories of Learning

The term *deep understanding* has been referred to in various developmental theories of learning, including: (1) transformative learning (e.g., Mezirow, 1991; Mezirow & Associates, 1990, 2001), (2) conceptual change (e.g., Duit & Treagust, 2003), “mindful” learning (Langer, 1991), (3) “expert learning” (e.g., Bereiter, 1997, 2002; Bereiter & Scardalamia, 1993; Berliner, 2001; Spiro, Coulson, Feltovich, & Anderson, 1988). Each of these theories attempts to trace learning as a developmental process from pre—pre-transformation, pre-conceptions, or novice knowledge—to post. However, in designing theories to fit a developmental trend, these researchers might have left out the other “stuff” of deep understanding, perhaps those understandings that implicitly affected the process or the sought outcomes of learning. I explain how Karl Popper’s (1972) theories about the Worlds of concepts helps us to imagine a metaphorical shelf on which to place that conceptual content in order focus on how conceptions are turned over in an individual’s mind. In contrast to these developmental theories, some theorists have proposed other means for categorizing deep understanding that seem more like typologies rather than developmental hierarchies. Several examples of typological theories of understanding follow this section.

Transformative Learning

Transformative learning theory was proposed by Mezirow as a way to conceive of how learners alter their perspectives or “frames of reference” and embrace a new way of

“seeing” their worlds. Mezirow offered a developmental theory, suggesting that learners progress through phases of learning (numbering anywhere from 6 to 12 depending on the study) as they move from one perspective to another. Transformation theory considers learning to be almost entirely a rational process and relies on critical analysis (of self and of the world) as a means for moving learners along the path of transformation. In sum, transformative learning is based on the premise “know thyself and understand others” (Schmidt, 2003, p. 390) as well as critical reflection. Transformation theory has been used in a few studies of teachers’ learning.

Studies of teachers’ transformative learning. James (1996) used action research as a teacher researcher for three semesters to study her educational psychology classes, which consisted mostly of male tradespeople (carpenters, mechanics, etc.) who were beginning careers as teachers. James claimed that as she was able to provide fertile conditions for critical reflection, her students began a process of transformation. She described how a case study early in the semester provided a “loan of consciousness” (Bruner, 1986) by which the class members could begin to see themselves as cultural members, thus providing a safe entry to critically examine their own frames of reference. She also noted the importance of establishing a “group culture” that frequently engages in open discussion, suggesting that the situation must feel “intimate, supportive, and yet challenging” (p. 94).

Like James, Harrington and Hathaway (1994) used Mezirow’s (1991) idea of critical reflection as a means to educate teachers. Their teacher research study involved analyses of pre-service teachers’ computer-mediated conference (CMC) discussions that

were part of their university-based teacher development program. Harrington and Hathaway (1994) found that CMC discussions provided ample opportunities for students to identify taken-for-granted assumptions about such issues as parents' roles in schools, roles of teachers as "knowers" and "thinkers," and the nature of teachers' relationships with their students. They also noted, however, that their CMC discussions did not consistently provide opportunities for critical reflection on issues such as discrimination and racism (a finding similar to Moje and Wade's [1997] study of case study methods in pre-service teacher education). Instead, Harrington and Hathaway suggested the need for extended face-to-face discussion and facilitation to encourage more critical engagement by class members.

Saavedra (1996) also examined how teachers experience transformative learning by participating in a teacher study group that studied their own assumptions about cultural issues such as discrimination and multicultural educational reform. As a participant-observer, she was part of a six-member, in-service teacher study group that met over two consecutive summers. Once teachers in the group created a space for comfortable discussion and learning about cultural, political, and power differences and dominant ideologies, they began to critically analyze how those ideologies affected their group dynamics as well as their own actions. As they became more conscious of these influences, the teachers developed more informed perspectives and attempted to recreate their group dynamics as well as their own actions and instructional practices accordingly—in ways aligned with multicultural educational initiatives (Banks, 1991; Banks & Banks, 1997; Ladson-Billings, 1994b; Nieto, 2002; Sleeter, 2001). Although the

teachers cited various constraints on their ability to carry out their transformed perspectives on instruction in the classroom (e.g., structure of the school day, societal expectations for schooling), they also noted the feeling of liberation and empowerment as a result of their transformative learning process that, Saavedra noted, was on-going and cyclical. Saavedra emphasized the value of the study group's transformative learning to their ability to implement multicultural education; she wrote:

Learning and teaching were no longer considered one-dimensional behaviors but multidimensional manifestations of beliefs, context dynamics, sociopolitical and cultural forces, and intellectual purpose. With this view of teaching, we challenged and worked to transform learning contexts for ourselves and our students ... Multicultural education as a broad-based reform effort has emphasized the necessity for teachers to change in order to reform schools

This can only occur if [teachers] are given ownership of their learning contexts in order to explore the development of knowledge and actions needed to transform schools. (p. 277)

Saavedra proposed that the teachers' transformation was part of a larger move by them to connect "beliefs, context dynamics, sociopolitical forces, and intellectual purpose." She also noted that the teachers in the group continued to identify problems, explore alternatives, and seek solutions—perhaps alluding to a process of Knowledge Building that extends from personal transformations.

Critiques of transformative learning theory. Transformation Theory is not without its critics. Several researchers have questioned Mezirow's (1991) reliance on

“rationality” as a decisive factor in transformative learning. In his meta-analysis, Taylor (1997) noted that researchers referred to the significance of intuition, feelings, “extra-rational” influences (Vogelsang, 1993), and “whole person” learning, which includes spiritual, emotional, affective, as well as cognitive ways of knowing (Group for Collaborative Inquiry, 1994). Silver-Pacuilla (2003) raised a similar question following her study of women, mostly from working class families, and suggested that Transformation Theory needed to integrate the experiences of marginalized social groups. Her participants, whom she described as “silenced” using the construct defined in *Women’s Ways of Knowing* (Belensky, Clinchy, Goldberger, & Tarule, 1986), expressed their learning in personal growth storytelling rather than through articulation based on logo-centric rationalization. Transformation Theory, as defined by Mezirow (1991), relies on the use of logical language and articulation (e.g., Mezirow, 1998) as the pathway to transformation. However, when women (or anyone) come to learning, they might undergo transformations in other ways and express their transformations in ways beyond the language of “rational” thinking—perhaps via action, artistic expression, and non-rational discourse (e.g., storytelling). Transformation Theory also seems to overlook the possibility that transformations might occur on the micro-level at different rates, in different domains, and on different cognitive planes (e.g., one might claim to believe a theory but not know how to implement it). For instance, how often have you heard someone say that he or she believes strongly about some idea only to act in completely contradictory ways? This theory has much room to grow if teacher educators are to use it to understand how (and why) teachers build knowledge.

Transformative pedagogy for teacher educators. Several teacher educators have developed instructional models to encourage teachers to transform their understandings about culture and literacy. It is noteworthy to mention that these models do not at all directly reference Mezirow's Transformation Theory; however, the aims appear similar: to use critical reflection of one's self and one's world to create learning that changes how one understands his or her role and how one views others (especially those who do not share a cultural background with the teacher). For example, in Alma Flor Ada and Isabel Campoy's (Ada & Campoy, 2004) *Authors in the Classroom: A Transformative Education Process*, they defined a "transformative pedagogy" as that which

help[s] us understand ourselves, one another, and the world in which we live . . .
[and] help[s] us take action in a creative manner, allowing us to offer our
individual contributions in a way that enhances the well-being of our communities
and our world. (p. 14)

Transformative education focuses on the interactions between teacher and students, families, and communities. The aim of transformative models and methods is to help teachers and students "realize their own goals" (p. 11) through the use of autobiographical sketches and stories. Ada and Campoy suggested that once a teacher comes to understand herself better as a culturally situated individual, she is better equipped to implement literacy instruction. Then, by examining and critiquing the bias inherent in literacy curricula and instruction, teachers might be better able to create classrooms that are enticing and liberating for all students.

Ada and Campoy's teacher education model is much like Schmidt's (1997, 2001) ABCs Model; both entail some "looking inward" in order to help teachers understand their roles as literacy stewards more meaningfully. Using Schmidt's ABCs Model, teachers' "transform" their understandings about self (by creating an autobiography) and others (through a biography of someone who is culturally different) and the relationship between self and others (by comparing the autobiography and biography). Then, they use these understandings to fashion their instruction to meet the needs of diverse student populations. In similar fashion, Florio-Ruane (2001) used autobiographies and biographies as a means to engage teachers in a transformative learning process as they read and write about their teaching experiences in an on-going book club. The underlying assumption for each of these instructional models is that in order to transform one's understandings about literacy and literacy instruction one must first know oneself, know others, and redefine the relationship between self and others. These theorists seem to argue that "deep" learning must take place among teachers if the goals of multicultural education are to be met. Yet as Allen and Labbo (2001) stated, there is little more than anecdotal evidence to support these instructional methods as effective for "transformative" learning. Many questions still exist: What does it mean to "transform" one's understandings? Is this simply a variation of conceptual change? Or does "transformation" entail some deeper awakening? And to what?

Conceptual Change and Conceptual Processing

Alexander (1998) proposed that micro-transformations can occur at the "idea level" (p. 55) and called these transformations conceptual changes. She also suggested

that conceptual change theory, although it has been espoused primarily by science educators, can happen in any knowledge domain including literacy education. Introduced by Posner and his colleagues (Posner, Strike, Hewson, & Gertzog, 1982), conceptual change theory connected ideas from Kuhn's understandings about the nature of scientific paradigm shifts (Kuhn, 1970) and Piaget's constructivist theories of assimilation and accommodation (Piaget, 1977). In *The Structure of Scientific Revolutions*, Kuhn suggested that scientific paradigms achieve popularity when scientists consider their existing paradigm to lack usefulness, when they search among competing paradigms for a more rationally sound way to make sense of their worlds, and when scientists generate some (albeit fluctuating) consensus around the newly adopted paradigm. Kuhn's theory is distinctive partly because he identified scientific paradigm shifts as substantially (although not entirely) socially defined, thus undermining the claim that science can be entirely "objective." When presented as an analogy to learning, Kuhn's claim promotes the idea that learners must become dissatisfied with their original conceptions, encounter new, competing conceptions produced within their social world, weigh competing conceptions rationally, and then come to a new conclusion that seems agreeable to the learner (given that the learner and concepts exist within a social world.) This is what Posner and his colleagues called conceptual change.

Posner and his colleagues (1982) used Kuhn's paradigm shifts to undergird their idea of conceptual change; however, they added to their theory of conceptual change by distinguishing between learning by assimilation or accommodation. For this, they relied on Piagetian theories of constructivist learning. For Piaget (1977), assimilative learning

happens when one comes to know by widening his or her understanding. For example, a learner might understand “tables” to be any rectangular platform atop four legs. But when confronted with a triangular topped table resting on a tri-pod, that learner might accept this to be a “table” as well. The learner is said to have assimilated this new information into his conception of what makes a “table” but did not have to change his conceptions about what a chair is or what a floor is. On the other hand, if a learner accommodates information, the learner must reorganize all relative conceptions in order to incorporate a new conception. For example, say a learner understands a “dog” to be anything with four legs and hair. Then the learner encounters a horse—hairy and four-legged, but not entirely dog-like. That learner might have to reorganize how he comes to know dogs, and, probably, horses. A learner who reorganizes information in order to incorporate a new conception is said to have accommodated that conception. These are crude examples, but I am hopeful that they explain the difference between assimilative and accommodational learning. “Classical” conceptual change theorists are primarily interested in understanding the latter kind of learning; that is, they aim to explain how a learner accommodates new conceptions (Duit & Treagust, 2003). Researchers and proponents of conceptual change learning have found that a learner’s prior conceptions (in many studies of science education they are called *misconceptions*) play a role in a learner’s assimilation and accommodation of new knowledge (Duit & Treagust, 2003). This is consistent with Constructivist theory which posits that knowledge cannot be transmitted from teacher to learner; instead, knowledge is constructed through a meaning making process undertaken by the learner him/herself.

Conceptual change as a pedagogical theory. Conceptual change theorists (and others) differentiate between conceptual change as a pedagogical method and as a means for understanding content. Research on the subject is usually offered as a way to teach using Constructivist methods as opposed to transmissive methods (this might also be called “teaching for conceptual change,” e.g., Lin & Gorrell, 2002) or to change teachers’ domain-specific knowledge (“conceptual changes among teachers,” e.g., Tillema, 1997; You & Schallert, 1992)—and sometimes both. For example, Tabachnick and Zeichner (1999) were involved in a large study of elementary and secondary science teachers who completed three semesters of science education courses in conjunction with their pre-service program. All of the teachers were taught explicitly about conceptual change pedagogy. Then they were assigned “action research” projects in which they had to identify and address a problem within their teaching for conceptual change. They found that the teachers inquired about students’ background knowledge (an essential phase in conceptual change pedagogy) but rarely went beyond that step. Instead, the teachers still operated in a transmissive mode of teaching. In sum, the teachers did not undergo conceptual changes themselves about how best to teach science (as most had entered their program relying primarily on the transmissive model in the first place) and they were largely unsuccessful implementing conceptual change pedagogical methods within their own classrooms. Tillema (1997) found a similar result after working with pre-service teachers who entered with “generic ideas and beliefs about what knowledge, competencies, and ideas are necessary for their role as a teacher” (p. 10). Although the teachers changed their performances as they learned new instructional methods, their

beliefs about how knowledge comes to be and how ideas are generated remained stagnant. These are two studies of hundreds; however, I selected them to show how researchers approach conceptual change theory in different ways. These studies also seem to echo the findings of Duit and Treagust (2003) who reviewed more than 80 studies and essays on conceptual change: Conceptual changes are difficult to induce and even more difficult to identify when they have occurred. Duit and Treagust suggested that conceptual change might be best explained as a construct that is largely under the control of the individual learner and is connected to a learner's motivation and intentions, knowledge, and social context.

Critiques of conceptual change pedagogy. In many instances in conceptual change research, the concepts introduced as the goal for change are considered rational or “scientific,” thus truthful and objective representations of reality; recently this assumption has come under fire. For example, Au (1998) proposed that analyses of conceptual change having to do with science education often uphold Eurocentric scientific findings as “truthful” and discredit alternative theories that stem from less powerful communities, such as Native American theories about the Solar System or Hawaiian theories about the Earth. She noted that educators who teach for conceptual change sometimes adhere to the idea that students must progress through the same historical stages through which Eurocentric science progressed (e.g., from Newtonian theories to Einsteinian theories); however, Au contended that this underlying philosophy overlooks many of the socio-historical theories relating to scientific explanations that stem from non-Western societies. Likewise, a researcher or teacher looking for

conceptual change in students' thinking might overlook possible alternatives as “wrong” even though they might actually seem truthful in non-Eurocentric societies. Carter (2004) seemed to agree that science education is primarily concerned with (what she called) “colonial” theories of science. Carter argued that if science educators are to take cultural diversity as a real and promising characteristic of schooling, then they must “(re)read science education” (p. 1). Although these arguments are specifically aimed at critiquing conceptual change in science education, they are also worthwhile when considering literacy pedagogy. Literacy has been shown to develop in multiple ways depending on cultural contexts (Barton Hamilton, & Ivnaič, 2000; Heath, 1983; Street, 1993); therefore, there is no one “truthful” or “scientific” representation for how literacy develops or what instruction must look like. In response, literacy educators are developing culturally responsive ways for instructing literacy (Au & Raphael, 2000) rather than depending on one “truthful” or “best” method for instruction.

Critiques of conceptual change theory point to a consistent focus in conceptual change research on the content of learners' conceptions themselves. That is, much of the research on conceptual change in science focuses on whether or not the teachers “got it”—in most cases, “got it” means whether they have assimilated or accommodated understandings intended by the course instructor as the more truthful understandings. However, few studies of conceptual change reach beyond the level of conception construction. And we must enquire: Even if conceptual change pedagogy is successful in “changing minds,” what happens when a new scientific or research-based theory emerges to displace older ones? What happens when conceptions that teachers have

accommodated become obsolete information? In their review of conceptual change literature, Duit and Treagust (2003) suggested that conceptual change theorists begin to propose how conceptions are developed rather than what they should become. This is an important switch that enables us to ask: How might learners develop conceptions in ways that will enable a learner to generate new understandings?

Conceptual processing as a way of viewing the mind's work. Whereas conceptual change researchers have almost uniformly attempted to describe whether or not conceptions were constructed among participants, few have tried to show how those conceptions came to be—how they were processed. This focus relies on a different model of the mind than the Constructivist model that Conceptual Change theorists have relied on for the most part (Duit & Treagust, 2003): a Connectionist model (e.g., Clark, 1993; Rumelhart, 1991). We can use the Connectionist model to explore what it means to consider the mind a processing tool as opposed to a bucket of information. Understanding the mind in this way causes us to liken concepts to artifacts rather than an individual's possessions. In other words, one does not possess concepts but instead processes conceptions constructed from sources that exist beyond his or her person. This idea is also supported by sociocultural theories of discourse (e.g., Gee, 2000; Bakhtin, 1981) and socially shared cognition (e.g., Wertsch, 1991, 1998) in which concepts are seen as flowing from one person to another through social discourse—restructured by each participant but nonetheless the emerging conceptions somehow resemble each other. Understanding conceptual artifacts (Bereiter, 2002) as existing outside the mind as well as within helps us to imagine a mind separate from the conceptions it holds. The role of

the mind is now that of a creator and processor of conceptual artifacts as opposed to a container for ideas.

One pivotal study of conceptual change focused on conceptual processing among pre-service teachers of literacy. Risko, Peter, and McAllister (1996) used cross-case analyses to trace how three pre-service teachers acquired knowledge about literacy instruction. They analyzed how the teachers came to understand their own teaching of literacy using their knowledge gleaned from videodisc-based cases introduced in a remedial reading methodology course. The authors found that the teachers experienced four main phases of learning. In the first phase, called “unidimensional conceptions,” the teachers expressed initial beliefs and perspectives but were unable to identify the problems presented in the cases. During this phase, they sought to collect strategies and materials, although not purposefully. The second phase, called “conceptual changes (adopting more perspectives),” occurred a few weeks into the course. At this point the teachers began to recognize the need to connect strategies and materials to the students being taught. They explored perspectives beyond those they began with in order to frame and analyze problems presented in the cases. The third phase was named “problem identification,” also described as “cognitive disarray” (p. 114). At this point in their class, the teachers began to move from videodisc-based cases to practicum experiences. They were “forced to reprocess information they had learned” (p. 114) in order to make sense of their new situation. The teachers sought old sources for information—their readings, instructors, peers—and searched for new sources of information as they talked with peers to see if they too were experiencing the same difficulties. They used their previous

models for teaching but modified them to fit their immediate needs. The fourth phase was named “problem resolution.” In this phase, the teachers were able to identify problems more readily by connecting the information to which they had access. The authors suggested that “conceptual change occurs as the students learn how to draw on multiple resources to think about complex events” (p. 117). Risko, Peter, and McAllister’s (1996) study focused on describing the developmental process of change rather than the conceptual construction of instructional strategies themselves. It helps us to conceive of how conceptual change might be considered as related to conceptions but not wholly wrapped up with them.

An Invitation to Popper’s Worlds. By focusing on how the teachers developed conceptions instead of what those conceptions were, Risko et al.’s study helps us to separate the conceptions from the individuals who think them. Popper (1972, cited by Bereiter, 1994, 2002) introduced the idea that there are three worlds in which concepts exist. Concepts in the first world—inelegantly called World 1—are about the physical world, the observable world. If likened to math, a World 1 conceptual event would be something like the total of the particular: two apples and three oranges in one’s fruit basket. World 2 consists of concepts in the representational or metaphorical sense. For example, using mathematical models to add 2 and 3 is a thought process that relies on numbers to represent concepts devoid (mostly) of any physical objects. Popper would consider adding numbers a World 2 event because the answer (the number 5) rests in an individual’s mind. When mathematicians (or budding ones in first grade) theorize about why 2 apples and 3 oranges make 5 fruit, a World 3 event takes place. World 3 concepts

include “assertive artifacts” (Bereiter, 2002, p. 76) such as theories, hypotheses, problem statements, paradigms, or religious tenets. These concepts exist only within minds and cannot be represented directly by the physical world (excluding some graphical or textual representation). Popper suggested that World 3 concepts can be processed by a person or within a group, but they seem to exist beyond group membership. That is, although World 3 cannot exist without any members at all, there is something to be said for a world of concepts that continue to grow or mutate even when someone integral to the group ceases to join in. This is similar to Gee’s (2000) notion of Discourse. Gee suggested that Discourse groups communicate using language unique to their practices and ideas. However, Popper’s Worlds were more focused on the conceptual significance of the actual content of the discourse in Discourse groups rather than communication itself or group membership. Bereiter (1994, 2002) suggested that most of education and schooling is concerned with Worlds 1 and 2: observing and representing. World 3, however, is concerned with manipulating concepts that relate Worlds 1 and 2. Popper’s theory helps us by drawing our attention away from simply identifying the content of conceptions and by providing a framework for thinking about how conceptions shift and are reshaped between Worlds. It also helps us to conceive of ideas as existing beyond the individual. If we are to accept Popper’s metaphorical worlds, then we also accept that although people construct conceptions, these conceptions are somehow related to their source as well as the individual thinking them.

Although they did not identify their findings as related to Popper’s world’s, Risko, Peters, and McAllister’s (1996) study could be interpreted as a study of how

teachers come to know Worlds 1 and 2 and relate that to World 3 concepts. The teachers participating in the study were invited to observe cases of teaching and reflect on their own teaching (World 1) and to identify how models for instruction were represented within those cases (World 2). They were also asked to use those models to identify problems and seek solutions in the cases as well as in their own teaching (World 2). By proposing that the teachers came to understand a variety of conceptions about literacy instruction, the researchers described something similar to getting to know World 2 concepts; these teachers were learning about representations of instruction. However, the researchers described how the teachers used this information to identify problems within their own teaching. Posing problems using the lens of the literacy community is a World 3 event. In essence, Risko and her colleagues who taught the course extended an invitation for their student-teachers to exist in all three of Popper's Worlds.

Teachers often are forced to consider World 3 concepts regardless of whether or not they have received a formal invitation during their preparation. They must identify problems within their instruction. They must determine solutions—often on the fly. They must weigh the pros and cons of particular methods with particular students. These activities are not unusual for any teacher. What is unusual is for teachers to have the opportunity to discuss their World 3 conceptions among knowledgeable others (Vygotsky, 1978). Identifying and building World 3 conceptions are often relegated to tasks like “reflection” (e.g., Schön, 1987) or discussions. These activities can be viewed as beneficial to the emergence of Knowledge Building; however, more often than not these are sophistic passes. They rarely go beyond the level of personal opinion or

situational coherence. For Knowledge Building to take place, World 3 concepts must create a foundation for each other. Opinions must be elaborated. Theories must be held and tested. Reflections upon contextualized instances must be drawn out to determine some vaster significance. More information must be sought purposefully. Informed, reflective, inquiry-driven teacher study groups (e.g., Florio-Ruane, 2001) might be the closest thing we have to formal invitations for teachers to join in World 3 Knowledge Building.

There are some important ideas to keep in mind about World 3. First, World 3 concepts, like their creators, are fallible. Second, World 3 is entirely human-made and entirely *not* physical. Yet World 3 concepts become something maneuverable, movable. When asked, a theorist might even describe his movement of World 3 concepts as “work.” By distinguishing among concepts as existing in Worlds 1, 2, and 3, conceptual change theorists can refine their understandings about learning. Conceptual change theorists might also begin to define learning as changes in connected development of conceptions rather than the simple (re)construction of familiar concepts.

Mindfulness and Expert Understanding

In discussions about deep learning, “Mindfulness” (Langer, 1991) and “expert understanding” (Bereiter, 2002; Berliner, 2001; Hammachek, 1999) and “cognitive flexibility” (Spiro, Coulson, Feltovich, & Anderson, 1988) often go hand in hand. In many ways, transformative learning and conceptual change theories share similar traits to each of these theories. They all entail that learners maintain openness to the world around them, critique familiar “facts of life,” identify complexity within the seemingly mundane,

make connections between what we know as well as with what need to know, and manipulate conceptions strategically and generatively. Following numerous studies of learning, Langer (1997) noted that most of our learning is “mindless.” We learn chunks of information here and there, but never really relate them in our minds. Langer’s term “mindful learning” involves a process in which the learner attends to incoming information and synthesizes that information—in essence, the learner is both a keen observer and an actor.

This can be related to teaching and teacher education in many ways, for teachers are called upon to be mindful observers of their students’ learning as well as thoughtful and knowledgeable actors for instructing them. In a study of eight sites of reading teacher education in the U.S., researchers found that preservice teachers were likely to be “responsive and mindful” (Maloch, Fine, & Flint, 2002, p. 349) when their instruction and learning involved a focus on instructional decision-making in flexible, knowledgeable, and strategic ways (p. 349). Langer contended that “mindfulness is a flexible state of mind in which we are actively engaged with the present, noticing new things [objects, factors, characteristics, etc.] and sensitive to context” (Langer, 2000, p. 1 of 4). She warned that too much of education reinforces mindless acceptance of facts and perspectives and threatens to numb learning.

While I agree with Langer’s position, I also find it slippery and even deceptive. How often do we think of ourselves as being mindful only to find out that there was more to the picture than what we considered? I suppose this is her point: A mindful person is

open to awareness; however, I do not think that mindfulness—in its extreme—is ever quite possible. And although it is a worthy goal, awareness is not the only answer.

Along with awareness is the need for conscious building of information to reach some goal. This might be considered expert learning. Berliner (2001), one of many researchers concerned with expert knowledge (e.g., Bereiter & Scardalmia, 1993; Gardner, 1983/1993), suggested that experts are more likely to understand when a problem exists, to understand the complexity of the problem, and to approach a problem from multiple perspectives in order to synthesize information to best solve the problem. Bereiter (2002) warned that experience is not necessarily equated with expertise. Expertise comes from “progressive problem solving”—that is, although much in-coming information is routinized (i.e., processed automatically), there is also an on-going effort on the part of the expert to gain more information because mental capacity is freed up. Theories about mindfulness and experts’ progressive problem solving point to a similar feature: the importance of attentiveness to conceptions and synthesis between conceptions. However, Bereiter (2002) wrote that experts actually become strategically less mindful of specific constraints. That is, as experts attempt to locate and solve problems, they purposefully identify constraints (sometimes considered assumptions) that they no longer have to be mindful of (at least for the time being). This is an important difference between experts and novices. For although a novice might be mindful of a situation or context, only an expert can bring to that situation a history of knowledge by which to define it. While occasionally novices can identify some intrinsic problem within the situation (recall Matt Damon’s character, Will, in *Good Will Hunting* [Damon,

Affleck, & Van Sant, 1997] who was a troubled, young university custodian and a novice to academia-styles of mathematical problem-solving but who proved to be a mathematical genius) this is rare (which is why it makes such a great movie!). More often it is the expert who identifies problems and seeks solutions—that is why experts must also often identify why and how the situation is complex and what constrains the solution (Bereiter, 2002).

The same is true for expert teachers—and more. Multiple studies of expert teachers identify knowledge, flexibility, and adaptability as crucial characteristics (e.g., Au, 2000; Berliner, 2002; Darling-Hammond, 1996; Ladson-Billings, 1994a). In a study of eight expert teachers in an African American community, Ladson-Billings (1994a) argued that expert teachers need not only to be knowledgeable and flexible in their use of conceptions of instructional pedagogy and content, but they also must be knowledgeable observers and actors in the surrounding community. Likewise, following her ethnographic inquiry in an early elementary classroom, Goldstein (1999) wrote that excellent teaching relies on expert navigation of what she called “the relational zone.” For Goldstein, the relational zone is that space in which a teacher and student can create a trusting and supportive relationship that nurtures learning. That is, expert teachers must not only be able to use their knowledge flexibly and strategically but also in response to personal and communal relationships with their students.

In addition, Spiro et al. (1988) reported that experts manipulate conceptions flexibly in “ill-structured domains.” An ill-structured domain is a group of related concepts that interact contextually and in inconsistent patterns across applications. The

authors suggested that introductory classes often present over-simplified information and hypothesized that oftentimes instruction for novices actually impedes “advanced knowledge acquisition” (p. 375). They stated, “in an ill-structured domain, knowledge cannot just be handed over to the learner. A priori codifications of knowledge are likely to misrepresent” (p. 382). Spiro et al. proposed “Cognitive Flexibility Theory,” a theory that suggests particular conditions for advanced knowledge acquisition in ill-structured domains, such as “avoidance of oversimplification” (pp. 377), exposure to “multiple representations” (p. 378), presentation of problems in situated contexts, identifying “family resemblances” (p. 380) among concepts, focus on assembly of knowledge (as opposed to retrieval), and some striving for connectedness among concepts by avoiding “compartmentalization” (among other suggestions). Spiro’s cognitive flexibility theory builds on theories about mindfulness and expertise—all involve some sense of attentiveness to the outside world (Popper’s World 1) as well as to inner-concepts (Popper’s Worlds 2 and 3); all involve an ability to manipulate concepts constructively; and all involve an ability to use concepts to produce new concepts. Spiro’s work, however, also pointed to the need for introductory classes to support the kind of learning that nurtures expert understanding or a foundation for further learning. It is also worth noting that Spiro et al.’s cognitive flexibility theory has often been used in conjunction with conceptual change frameworks.

Summary of Developmental Theories of Learning

In sum, transformative learning, conceptual change and conceptual processing, mindful learning, and expert learning all encourage deep processing of information and

Knowledge Building. Yet none of these theories alone can show what it means when information has undergone deep processing. Transformative learning shows how individuals who go through it feel—their sense of empowerment and liberation from oppressive frames of reference—but cannot show how connections are made between the learner’s sense of freedom and his or her continual quest for knowledge. Conceptual change theory can show how knowledge is constructed and perhaps even how it could be processed as it develops; however, conceptual change theory does not show what happens emotionally or even socially once that change has been made and the learner begins to enter a new Discourse group (Gee, 2000) and sometimes risks losing access or affiliation to a previous Discourse group. Mindful learning takes into account the need for on-going awareness, but does not account for the need for identification and strategic use of assumptions in the quest for learning more. Expert learning suggests that strategic identification of constraints, although it allows for some mindlessness, is necessary and even productive in learning. Expert learning theorists (e.g., Spiro et al., 1988) also show how novice learners can be inducted into expert learning about ill-structured domains if their cognitive constructions of information remain flexible and give credence to the complexity of the domain itself. None of these theories can stand alone. Taken together, however, theories of transformative learning, conceptual change, mindful learning, and expert learning might provide some lens for clarifying what it means to have understood. Each of these theories is supported and exemplified by empirical evidence and seem related to Knowledge Building in that they each indicate a developmental progression of learning; however, none can stand alone as fully to explain Knowledge Building.

Typologies of Understanding

The developmental theories of learning such as transformative learning, conceptual change and conceptual processing, as well as expert and mindful learning come with a start and finish to learning. However, Knowledge Building eludes all endpoints. It is continuous. Understanding is the key to Knowledge Building (Bereiter, 2002). Understanding entails the awareness of conceptions as they are socially constructed as well as personally constructed, use of cognitive strategies to sift through concepts and conceptions, ability to build on conceptions and use them for innovative thought, and performing in some way responsively and intelligently in a situation that relates to constructed conceptions. Thus, it is also helpful to think of learning in terms of typologies for understanding. Examples include Bruner's (1986, 1990) paradigmatic and narrative understanding, Egan's (1997) four types of understanding, and Schmeck's deep processing model (e.g., Lockhart & Schmeck, 1983). Unfortunately, with the exception of narrative understanding, few of these types of understanding have been used to interpret teachers' learning. While none of these theories predominates other theories of learning and understanding, they might be considered as supplementary theories to help explain Knowledge Building.

Narrative and Paradigmatic Understanding

Bruner (1986) explained understanding to be a dichotomy of “two irreducible modes of cognitive functioning” (p. 97): narrative and paradigmatic. Narrative understanding—also called “narrative knowing” (Polkinghorne, 1988)—is concerned primarily with contextualizing human actions and intentions through story-like features

(e.g., characterization, plot-based sequencing of events); whereas, paradigmatic understanding is concerned with logical or formal explanation with less emphasis on contextualizing or examining bias within ideas. Bruner suggests that there is no way for these dual ways of knowing to contradict or corroborate ideas. Instead, narrative understanding “precludes verification as the basis for...‘meaning’” (p. 113) while paradigmatic understanding thrives on rational verification. Of late, paradigmatic understanding seems to have much less clout as a research subject for teacher education; however, narrative understanding has been a subject of much research on teacher education.

Much of the research on teachers’ narrative understanding touts the “natural-ness” of narrative especially for females, the most represented gender in teaching (e.g., Witherell & Noddings, 1991; Silver-Pacuilla, 2003), and advocates the use of narrative, written self-reflection as a pedagogical tool (e.g., Ada & Campoy, 2004; Florio-Ruane, 1997; Schmidt, 2001). Doyle and Carter (1993) differentiated *narrative* from *story* by suggesting that story is a type of narrative. They wrote that stories include story structures and temporal sequencing of events, whereas narrative includes a wider variety of genres (e.g., a memoir, a description). Doyle and Carter concluded that stories are particularly engaging for teachers and are a way to retain a teacher’s voice as they communicate their ideas.

Several researchers seem to have taken this to mean that teachers might benefit from creating autobiographical sketches as a way of making sense of instructional practices and teaching experiences. Bean (1994) studied how 45 preservice teachers’

autobiographical narrative understandings informed their pedagogy. He found that their experiences with reading and schooling as children affected how they viewed their student-teaching placements, which were often very different. Bean concluded that autobiographical writing was a way to help pre-service teachers address their attitudes about teaching and could positively influence their perceptions of divergent experiences in diverse classrooms. In a similar study of preservice teachers, Brown (1999) found that participants used autobiographical understandings as a way to create examples of theoretical instructional practices in their minds. She advocated that pre-service teachers create their autobiographies in the presence of each other so that they could collectively analyze their past experiences. Finally, Florio-Ruane (1997) reported that members of her *Future Teachers' Autobiography Club* used their written personal narratives in concert with book discussions of biographies about teachers to shape their pedagogical beliefs.

Of course, narrative understanding does not only develop in written autobiographies; it can take many forms and can sprout from many sources, including pictorial representation, informal conversation, reading accounts of others' stories, and multimedia presentations. For example, in a study of teachers' evolving knowledge about grouping for instructional purposes, Ellis and Whyte (2001) asked 114 pre-service and in-service teachers to use pictorial representations of how grouping might take place effectively and to construct a description for their pictures. They also asked teachers to collaboratively analyze and critique 15 images. They asked the teachers to narrate how grouping might occur in each picture as a means for eliciting their paradigmatic explanations of effective grouping techniques. In addition, Spouse (1999) compared five

case studies to show how nurses used informal, peer narratives to make meaning in a professional education program. She found that these informal conversations that took place outside of class and in which the participants told each other their feelings about, interpreted, and explained their experiences were essential to learning. Boling (2004) also touted the usefulness of narrative understanding and suggested (as many others do) that studying video-taped, hyper-media, and written cases of teaching can be informative tools for teacher education. In her study of 25 pre-service teachers' learning, Boling noted that while each medium was useful for narrative understanding, each produced differing results. The written narrative produced responses related more to theoretical usage of terms; whereas, the video and hyper-media cases and responses produced responses regarding more technological instructional skills sets. In sum, there are a multitude of ways for teachers (or any learner for that matter) to come to narrative knowing.

This influx of research about the usefulness of narrative understanding for teacher education often seems to overlook the possibility that there are assumptions about where the narratives are supposed to "end up." That is, while Bruner (1986) and Polkinghorne (1988) would not have advocated that there could be a right/wrong narrative answer, when teachers write their narrative autobiographies for something like Schmidt's (2001) Autobiography, Biography, and Comparison (ABC) model, there seems to be at least an implicit expectation that the teacher will come to appreciate and believe in concepts like tolerance and self-awareness. Take, for example, Ellis and Whyte's (2001) stated goal for narrative understanding among their participants: "to help them connect to their

experience” (p. 18). This assumes that teachers have not yet “connected” to their experiences and, thus, need to. Likewise, Schmidt (2001) suggested that teachers must “know thyself to know others” (p. 389), a goal echoing a specifically Christian tenet and assuming that teachers share the same belief. Thus, there is much more to be learned about what values and issues affect narrative understanding and pedagogy (Rossiter, 1999).

Egan’s Categories of Understanding

In contrast to Bruner’s narrative/paradigmatic duality, Egan (1997) suggested that understanding takes place in a variety of ways: Mythic, Romantic, Philosophic and Ironic. Egan came to these conclusions by examining how knowledge has been passed through groups of people via language throughout history. Mythic understanding occurs whenever language is present and provides ways to examine mystical, supernatural explanations—much of which have been integrated into fundamental knowledge of societies. Egan stated that mythic understanding allowed humans to reach beyond and begin to connect episodic perceptions. Romantic understanding involves abstract concepts that are not necessarily aligned with perceived concepts. For example, Romanitic Understanding might involve a belief in heroism or rationality—it involves a “commitment to the extremes of reality” (Egan, 1997, p. 96). Philosophic Understanding involves a search for long-lasting meaningfulness regardless of immediate relevance or entertainment. It is the search for laws, theories, general schemes, and the tying together of facts. The aim of philosophic understanding is to reflect reality “like a mirror” (Egan, 1997, p. 112). Finally Ironic Understanding reflects a postmodern concern that all

abstractions and representations are perversions of reality. It is what keeps us from taking ourselves too seriously and frees us to question, joke about, and create new ideas to make sense of our perceptions. Egan contended that all of these forms of understanding are available to humans of any age, although he conceded that there might be some developmental influences in how conception are conceived. Egan concluded by suggesting that the role of education is to encourage and deepen understanding of all kinds—this is the crux of Knowledge Building (Bereiter, 2002).

Deep Processing

Unfortunately, there are few studies under the heading of “deep processing” that I would hold up as being excellent or enlightening exemplars because the theory of deep processing as understanding has become a theory primarily focused on discrete categories called “learning styles.” Most studies of deep processing attempt to show correlations between surveyed “learning styles” (e.g., Schmeck, Ribich, and Ramanaiah’s [1977] Inventory of Learning Processes instrument) and subsequent test scores and grades (e.g., Clump & Skogsbergboise, 2003; Gadzella, Stephens, & Baloglu, 2002) rather than show how thoughtful processing took place. Inventories of learning styles (e.g., the Inventory of Learning Processes [ILP], Lockhart & Schmeck, 1983) usually identify at least four ways of processing information: deep processing, methodological processing, elaborative processing, and fact retention. Deep processing is the tendency for a learner to critically analyze, compare, contrast, and organize information without specific direction from a teacher; in other words, the learner is intrinsically motivated to do this. One undergoes deep processing by drawing connections between concepts, distinguishing relative

hierarchies among conceptions and concepts, and evaluating which conceptions are worth further investigation. In contrast, a methodological learner is one who relies on a teacher's guidance and rules to process information. Methodological processing might involve critique; however, the learner will not do so unless guided to by the teacher. Elaborative processing is the tendency for learners to take information and add to it using their personal connections and information gleaned from outside the class context. Finally, fact retention is the tendency for a learner to approach learning by retrieving specific factual information and recall conceptions.

At best, learning styles and deep processing theories belie a consistency with goals and motivation studies (e.g., Scardalamia & Bereiter, 1984) which point out that a learner's goals will define what he or she learns. At worst, "learning styles" are portrayed as immutable objects that an instructor must adhere to *or else*. In such cases, there is little evidence that a learner's style will alter according to context—an argument that flies in the face of what is known about motivation and context-dependency (Bereiter, 2002). Often a study about deep processing will dismiss ineffective instruction as "not matching a learner's style," thus leaving the reader to surmise how instruction could have invited all different styles to the learning experience (among other things).

Nonetheless, deep processing poses an avenue of inquiry and might prove to be a useful construct by which to consider learning. This is because the idea of deep processing relies on a Connectionist model of the mind (Bereiter, 2002; Rumelhart, 1991). Deep processing models do not displace Constructivist models of learning; they seek to explain how conceptions are understood beyond surface level recall. Unlike

studies of conceptual change that usually describe the content of conceptions held, deep processing studies set content aside and focus on the ways in which the mind processes concepts. I imagine this to be like placing the content of conceptions onto the shelves in Popper's Worlds so that the focus can be on the how a mind moves between Worlds 1, 2, and 3. Deep processing—in its finest hour—might even help to show how affect, goals, and motivation are intertwined in the experience of Knowledge Building (Bereiter, 2002).

Summary

Knowledge Building involves both progressive learning as well as intensive understanding. Developmental theories of learning and non-hierarchical typologies for understanding help us to imagine how learners to build knowledge. As Bereiter (2002) stated:

Understanding implies abilities and dispositions with respect to an object of knowledge sufficient to support intelligent behavior. ... [and] teaching for understanding is a matter of cultivating a learner's relationship to objects of knowledge, developing it into a relationship capable of supporting intelligent action. (p. 101)

This leads to the question: How might Knowledge Building ensue for teachers who will be asked to support the same type of learning in their own classrooms? The purpose for this study is to explore how beginning teachers came to understand course-related content during a semester in which they were enrolled in a course titled "Literacy Methods for Culturally and Linguistically Diverse Students." I then describe how members of the

class constructed their conceptions (as evidenced in their talk and written discourse) and represent their passages toward building knowledge.

CHAPTER THREE

METHODS

In this chapter, the three guiding research questions of the study are restated. I address methodological issues related to the design of the study. Then I describe the context and participants for the study. Following that, I depict the collection of in- and out-of-class data sources, and describe the process for data analysis. Finally, I support the credibility of the study.

Research Questions

This is a study of beginning teachers' learning processes as they participate in a graduate-level course titled, "Literacy Methods for Culturally and Linguistically Diverse Students." The following research questions guided the study:

- What are the teachers' conceptions about course-related topics? How do their conceptions shift?
- What are the processes through which the teachers' conceptions shift during the semester?
- What are individual differences in teachers' learning and processing in a course?

The primary objective for the study is to examine teachers' changing conceptions (the what) and the process by which their conceptions evolve (the how) as well as to describe how individuals experienced this cognitive process. The study occurred during the spring 2004 when the participants were enrolled in the course and during the month following their completion of that course.

Methodological Issues

In order to answer my research questions, I collected evidence of and analyzed written and spoken language expressed in and out of class to infer what and how class members were thinking. Using of language to represent the mind's work is always a tricky endeavor. This raises some methodological issues that I address up front.

Using language as a lens by which to understand one's thinking is grounded in theoretical claims made by several learning theorists. For example, in *Thought and Language*, Vygotsky (1934/1962, retrieved on Oct. 4, 2004 from <http://www.marxists.org/archive/vygotsky/works/words/vygotsky.htm>) claimed:

The relation of thought to word is not a thing but a process, a continual movement back and forth from thought to word and from word to thought. In that process the relation of thought to word undergoes changes which themselves may be regarded as development in the functional sense. Thought is not merely expressed in words; it comes into existence through them. (n.p.)

In addition, Bruner (1986) wrote that language and thought are intertwined and develop reciprocally as humans interact socially. Bruner advocated that learners develop their understandings through participation in social groups. Wertsch (1991, 1998) suggested that socially shared cognition is an instance in which members of a group use language to express thinking, and cognitive processing is conducted by the group as a whole. I collected statements from focus group discussions, online responses, and in-class discussions. I also used statements in which individuals told about their conceptions and their ways for processing conceptions explicitly in those data sources as well as in

interviews and course assignments. Wertsch (1998) suggested that combining analyses of socially shared cognition with analyses of individual cognition is a way of “going beyond the isolated individual when trying to understand human action, including the communicative and mental action” (p. 19). It should be noted, however, that my analysis of all of these data sources relied on statements that were made aloud or written for someone else to read; thus they are not fully indicative of the “inner speech” process that took place among individuals. I am not claiming that my analysis is a mirror-like representation of cognitive processing, but merely an inferential understanding of how members processed conceptions during their learning.

Context

The study took place at a mid-size state university, TMU (all names are pseudonym), in south western U.S. serving a student population of approximately 26,000 primarily White students (76%), but also includes Hispanic (19%), Black (5%), Asian (2%) and American Indian (1%) students. The university is a prominent presence in the small town in which it is located. “Literacy Methods for Culturally and Linguistically Diverse Students” is a masters level course in TMU’s College of Education’s Department of Curriculum and Instruction and met each Thursday evening for three hours over 15 weeks. The course included theoretical readings and discussions about cultural identity, discrimination, racism, White privilege, linguistic diversity, bilingual education, multicultural literature, and culturally relevant instruction. The course professor also modeled, guided, and asked members of the class to develop lessons focusing on how these theories might translate into instructional practice. The course might be considered

a hybrid; it is one in which issues such as racism, discrimination, and biases were explicitly taught and discussed and in which methods such as language experience charts and readers theatre, activities such as memoir writing, small-group book discussions, and strategies for reading informational texts were also described and modeled.

I chose to conduct the study during this course because it is one in which content-area methods instruction is integrated with multicultural education (see course syllabus in Appendix A), as advocated by Banks (1991; Banks & Banks, 1997), Sleeter (2001), Nieto (2003), and others, and thus might draw participants into thinking about culturally relevant literacy instruction. I also chose this course because it integrated multiple modes for discourse (e.g., reflective, personal writing; practical lesson planning; computer-mediated communications, and in-class discussions and presentations). Research suggests that learners interact differently depending on the mode of communication offered within a course (e.g., Boling, 2004; Chinn & Brewer, 1993; Faigley, 1992; Rivard & Straw, 2000). Because I was studying language, having many means for members of the class to communicate their conceptions provided me with multiple data sources and allowed me to better understand the conceptions of members who might prefer one mode to another or who might react differently depending on the mode.

The C-MED Program

The class that served as the focus of this study is part of the Certification-Master's Educational Degree (C-MED) program at TMU, in a post-baccalaureate program offering teaching certification with or without a master's degree in Elementary Education (Early Childhood through grade 4). Entry into the program requires a Grade Point Average of at

least 2.75 on the last 60 hours of coursework in college-level courses and a Graduate Record Examination score of around 900. This course is required within the C-MED program and can be taken in any sequence. The C-MED program also requires a reading methods course (for early childhood through elementary ages) that six of the participants had already taken and a language arts methods course that focuses on writing instruction that three participants had taken. The C-MED program offers evening classes to accommodate working students. There is no field-experience component to courses in the C-MED program. Instead students must complete 35 hours of field-experience in schools (2 hours weekly) on their own time. A semester of student teaching is also required to complete the program; however, for working educators, this could be done as an internship over two semesters.

Participants

The course was taught by Lauren (all names are pseudonyms), a first-year assistant professor at TMU. She is a White female in her mid-thirties and an experienced teacher of elementary and adult education. Lauren taught a similar class the previous semester to 150 undergraduate students; however, she redesigned the course significantly to accommodate a smaller class size and address the needs of graduate students who, for the most part, had each had some experience working in public schools (thus, I refer to the members of the course sometimes as “teachers” and to Lauren as the course professor). She created a seminar-like format for the course to encourage discussion and conversation among class members. Lauren integrated several projects into the course design.

I chose to study Lauren's course because she and I have already had a friendly, trusting relationship prior to my engagement within the course as a participant-observer. She had also described her course to me in advance of the study, so I knew what her goals for the course were and that they fit the description of one that I wanted to study. I knew that Lauren would welcome my presence in the class and provide ready-access to data sources that I needed for this study. I also knew that Lauren would work with me to coordinate scheduling the focus group meetings outside of class time (she shortened class meetings by about 30 minutes on the days when we had focus group meetings).

Eight (including seven females) of the nine students enrolled in the course consented to be part of the study. One participant, Maria, planned to finish her certification but not to earn a master's degree. All of the others expected to earn their teaching certification and a master's degree in elementary education. All were taking one other course within the C-MED program and were working full-time (participants in this class were working full-time as substitute teachers, teaching assistants, babysitters, and teachers; except Tony and Anna who were not working full-time, but had part-time jobs in and outside of schools). Brief descriptions of the participants are provided in Table 3.1.

Table 3.1

Teachers' Biographical Information

Name	Teaching status at the time of the study	Ethnicity	Age
Anna	No teaching experience	White	early 20s
Maria	Second-year Pre-K bilingual teacher	U.S.-born Mexican American	mid 50s
Karen	No teaching experience; full-time babysitter	White	late 20s
Jen	Library assistant in an elementary school and an after-school reading tutor (10 years experience as a special education teaching assistant)	White	early 30s
Joyce	Long-term substitute teacher in a deaf education class	White	late 30s
Maya	Full-time teaching assistant for special education (inclusion model)	Black	mid-30s
Nena	First-year Pre-K bilingual teacher	U.S.-born Mexican American	late 30s
Tony*	Not teaching (but was a high school band director)	White	late 20s

* Tony only participated in one focus group and did not do a follow-up interview.

I collected data as an observer-participant, interviewer, and focus-group moderator. I am a White female in my mid-30s and an experienced teacher who is

currently earning a doctoral degree in education. As the researcher, I situate myself as an advocate for cultural awareness and multicultural educational reform. I had read most of the assigned readings already and was familiar with the topics that were addressed because of my own teaching experiences and courses in my graduate program.

I was introduced by Lauren on the first day as a doctoral student who is interested in studying how learning occurs in a course like theirs. Halfway through that first class meeting, after telling more about myself and my family, I left the room, and they had an opportunity to decide whether or not to allow me to participate within their course. Upon returning to the room after about 20 minutes, I was told that I could conduct the study and participate in the class. During class discussions, I asked questions about what teachers in the class said (“what do you mean by ... ?”), responded to requests for information, and told about my personal experiences when others were sharing theirs; however, I tried not to give advice. I was not the professor for the course, so my interpretations are not marked with the same power issues that are characteristic of teacher-research. Nonetheless, even as a participant-observer in class and focus group facilitator out of class, I felt I retained a powerful position within the group because members of the class asked about my teaching experiences, for information about topics that they were studying, and about my experiences as a doctoral student. I felt as though they saw me as neither the teacher nor a peer, but something in between.

Data Collection

I began attending class on the first day; however, data collection did not begin until the fourth week of class (after Institutional Review Board approval). I gained entry

into the group from the beginning of the semester and attended all of the class meetings throughout the semester. Prior to collecting any data, I formally invited all members of the class to participate in the study by presenting my intended research agenda and asking for their consent (by signing a letter of informed consent). I collected data from the class setting as well as from out-of-class settings using the following sources:

Table 3.2

Sources for Data Collection

Out-of-class data sources	In-class data sources
4 Focus group meetings throughout the semester	Ethnographic field notes from each class meeting
1 Individual follow-up interview per participant about a month after the course ended	Class artifacts <ul style="list-style-type: none"> • online responses • ABCs model project • units of study/lesson plans

By using data collected from multiple sources and settings, my findings are well-supported (Morgan, 1997) and triangulated thus reducing threats to validity (Albrecht, Johnson, & Walther, 1993). In- and out-of-class data were used reciprocally (Erlandson, et al., 1993; Emerson, Fretz, & Shaw, 1995) to help determine topics for focus groups and interviews as well as to direct my observations during the class.

Out-of-class data sources

I collected data outside of the class setting from focus group meetings and from individual interviews. These were my primary sources for data analysis.

Focus group meetings. Focus group meetings were held in the building where class took place immediately after class. For three meetings, we met in the classroom itself and for one we met in the lobby downstairs. Members of the group were seated in a circle and usually had pizza and soda as they talked (I bought pizza for each meeting because most of the group were working educators who had skipped dinner in order to make it to class). I transcribed audio-tapes taken from each discussion, collected field notes, and wrote reflections about my role as a mediator process after each focus group meeting. There were four meetings during the semester. In the first meeting, participants were reminded that their discussions would not affect their grade for the course or their relationship with either TMU or the University of Texas at Austin and that they could drop out of the group whenever they chose. During the third class meeting the teachers had already come to consensus for “class expectations,” including: (a) “share teaching and learning experiences,” (b) “share openly—respectfully”; (c) “show courtesy by making eye contact, saying, ‘I can respect what you are saying...’”; (d) “agree to disagree”; (e) “use active listening”; and (f) “be accountable for your actions, but be forgiving.” I reminded the group of those expectations and suggested that we apply them to the focus group meetings as well.

I began three of the four focus group meetings with a pre-planned activity related to literacy instruction and evaluation. Activities like these help to focus the talk in a

group around the subject matter intended by the facilitator (Morgan, 1997). One of the meetings did not involve a pre-planned activity; however, one of the members, Jen, presented her own teaching case which served as our focus throughout most of the discussion. These four activities spotlighted instruction and evaluation alternately and provided a tap into the teachers' evolving understandings. Below is a brief description of the activities which served as the focus for each group meeting.

Table 3.3

Focus Group Activities

Focus Group Meeting	Activity	Leading question
1	View a short video of a bilingual fifth grade class discussing their experiences with immigration officials at the Mexican/American border in response to reading <i>Esperanza Rising</i> (Ryan, 2002)	Is this literacy instruction?
2	Review several samples of the Texas Assessment of Knowledge and Skills (TAKS) test.	Are these evaluations useful for understanding every child's literacy learning and development?
3	(Introduced by Jen spontaneously) Respond to a case in which a teacher is asked to prepare a bilingual third-grade student for the state-mandated reading test. The child is described as having "no language" and has not performed well on previous benchmark tests.	What should the teacher do to instruct the child?
4	Review a series evaluations, assessments, and instructional guides related to one student. Rank each item from most to least informative for instructional planning.	What do you value when you evaluate a students' literacy? What do you need to know to instruct a child?

When I posed a leading question, each participant wrote a brief answer before discussing their thoughts. Asking focus groups to write before they discuss a topic is a way to avoid “groupthink” (a phenomenon in which groups adhere to a consensus instead of each considering a topic autonomously) and to encourage more personal disclosure (Albrecht, Johnson, & Walther, 1993; Morgan, 1997). I tried to encourage members to explore their thinking and be willing to change by saying, “You might change your mind about this.” In this way, I tried to reduce the chance that any one member would feel that she had to defend a certain position. As each focus group discussion continued, I asked questions to probe their talk. For example, when the teachers’ talk moved to discussing children’s “levels” I asked, “How do you know what a level is?” When they talked about “connections” I said, “Tell me what that looks like.” By probing their statements, I hoped to gain fuller understanding of the teachers’ intended meanings. I also tried to weave in questions guiding the participants to reflect on contrasting ideas that were presented within the group by saying, “I’m hearing some different ideas here. I’ve heard ... and What do you believe?” I wrote field notes following each meeting to record the seating arrangement, patterns of participation, reflections on my own moderation of the discussion, a synopsis of the discussion (including any generative themes), ideas for interpretation, any wonderings I had, and questions for future meetings or interviews.

Individual follow-up interviews. About one month after the semester’s end, I asked members of the focus group to meet in person for an individual interview so that I could understand what they learned and recalled from the class after the momentum of the

semester had tapered. Each interview was audio-taped and transcribed. During the interviews, I asked each member

- to clarify particular comments that they had made or verify my own understandings of their comments.
- to tell me what and how they thought they had learned in the class
- to describe experiences or influences on their learning
- to reflect on general topics that many of the members had addressed throughout the semester. These topics were identified through the on-going data analysis and my questioning regarding these topics was done using a Freudian-like, free-response method: I would say a word and the participant would respond with whatever came to his or her mind.
- to describe how they felt while participating in the focus group
- to reflect on how their participation in the study might have influenced their learning
- to describe when or why they or others might have been silent during the class discussions or focus group meetings.

I structured the interviews using these as cues; however, each interview was different because of the open-ended nature of my questions. Interviews lasted between 1 to 2 hours. In addition, I wrote field notes either during or immediately following the interviews to capture any sense of emotion, expression, and hesitancy. Preliminary ideas for interpretation were included in these notes. Individual interviews were held in various places (cafes, book shops, fast food restaurants) at the convenience of the participants.

In-class Data Sources

I collected data related to the class including field notes of class discussions, and artifacts from the class. During class, all of the teachers usually sat in a semicircle facing the front where the professor sat facing them. Occasionally the professor would use the chalkboard or would give a Power Point presentation at the front of the room. Sometimes the teachers would move from their semicircle so that they could work in small groups to complete in-class activities (e.g., practice a readers theater script, make a poster displaying text information). On one occasion (the second class meeting), the class met in a computer lab and participated in a synchronous online discussion.

Field notes. At each class meeting, I wrote ethnographic field notes (Emerson, Fretz, & Shaw, 1995). I attended to and recorded the sequence and means for addressing topics, what was said, patterns of participation (who attended or was absent, who discussed, who remained silent), where members sat themselves, how they moved through the room, and physical, linguistic, and emotional expressions among class participants. I took short-hand notes during class and then typed more coherent field notes after each class.

Class artifacts. I collected artifacts written by the participants, including class assignments and online responses. My copies of assignments did not indicate any grade so as not to jeopardize participants' grade confidentiality. The assignments collected include: (a) online written responses to course readings; (b) autobiographies, biographies, and cultural comparisons (ABCs projects); and (c) units of study or lesson plans created by individuals or partners.

Each class member was required to write five online reflections on their readings on particular dates throughout the semester. For each, members were required to write one long (page length) response to a reading or class discussion topic and at least two short reactions to their classmates' online comments. These messages were usually postings rather than messages *to* anyone in particular. However, sometimes these messages would turn into impromptu online discussions of readings and topics and the members would refer to classmates' messages in their own. I collected the reflections and reactions as they were presented online. As I collected these, I reviewed them and wrote summary statements. I also used the reflections and responses as a source for inquiry by taking notes on my own questions and wonderings and asking members about them in informal discussions or by bringing up the topics in the focus group meetings.

For the ABCs model project, each class member was required to create an autobiography to describe their culture(s) and show how their culture(s) have affected their literacy experiences. Members also interviewed someone who is "culturally different" from themselves. These interviews provided data for members' biographies. In the biographies, members were asked to describe another person's "culture" and "literacy." Finally, the members created a Venn diagram to compare their own culture to that of another. I collected copies of ABCs projects. I created a brief summary for each member's ABCs project and identified prominent themes among the projects by rereading them and noting similarities and differences.

For another assignment, class members worked individually or in small groups to create lesson plans for a unit of study. Each unit was supposed to represent "culturally

relevant instruction” (Ladson-Billings, 1994a, b). I collected these lessons plans at the end of the semester. For each set of plans, I created a summary labeled with the members’ names, topic(s) of study, intended audience (grade level and cultural characterizations), and a statement about the plans or unit.

Data Analysis

I conducted three rounds of data analysis. These were necessary because my three research questions required different ways of approaching the data. For each round of data analysis, the data were analyzed inductively using constant comparative analysis (Strauss & Corbin, 1990, 1998) and conceptual modeling (Britt, 1997). Round one involved a content analysis to infer what topics the group addressed in and out of class as well as each individual member’s conceptions related to those topics. Round two involved an analysis of the ways in which members seemed to build conceptions related to topics. And round three involved designing three case studies by looking across all data sets at an individual member’s conceptions and how he or she constructed conceptions.

Topical analysis: Finding the “big ideas.” Data analysis was on-going during the collection phase using constant comparative analysis (Strauss & Corbin, 1990, 1998). Online responses, class assignments, focus group transcripts, and field notes were read, reread, and open-coded by identifying what topics were discussed. In- and out-of-class data were used reciprocally during this phase of the study. The codes were honed with successive readings until they were consistent from one reading to the next. As topical codes amassed into larger themes, I created categories. These categories were created and

recreated as more data were collected and coded. For example, I began writing initial codes along the margin of the focus group transcripts to summarize the topics discussed including, for example, “different values in different cultures” or “all people have cultural backgrounds” or “multicultural education.” I decided that each of these codes were in reference to a big idea, in this case, the big idea was “culture.” Then, as I looked across my codes, I created a coding system to mark anything having to do with various big ideas, or topics. So, for the examples I mentioned, I labeled the category “conceptions about culture.” I looked across all of the data sources for any statement that addressed that topical category. I did the same with the remainder of the data and labeled the rest of the topics: “conceptions about language,” “conceptions about literacy,” “conceptions about relational connections,” and “conceptions about equitable educational opportunities.” These became my category labels. They cropped up in many data sources and across time. Although these categories were prompted by my inductive analysis of the data, they are (not surprisingly) topics that served as a focus in the course itself and were intended by the course professor (as described in her follow-up interview) as goals for learning.

After the end of the semester, but before the individual follow-up interviews, I created data overview grids (Knodel, 1993); an overview grid is a matrix used to compare individuals’ conceptions across the topics. My overview grids compared each member (across the top), each topic (along the side), and four time periods during the semester (on separate charts). Each cell of the grids included paraphrases of a member’s comments, quotations, and/or any indicators of their general agreement/disagreement (as recorded in

my field notes). In this way, I was able to get a feel for what each member had said or written about each topic over time. I then compared the members' conceptions related to the topics because I wanted to understand more about their individual ways of learning. These analyses of individual conceptual shifts and comparisons among them were used in designing final interview questions for each member. After the follow-up interviews, I added the information gleaned from the members' answers to the overview grids and created a conceptual map for each member to show the progressive development from pre-conceptions to post-conceptions.

Process analysis: Modeling cognitive processing. I conducted the second analysis to address the question: What are the processes through which the teachers' conceptions shift during the semester? I began my analysis by using the focus group transcripts. The transcripts were divided into topic units. That is, each time a new topic was taken up by the group, I marked the beginning and end of that unit. There were 144 topic units in the transcripts for all four focus group meetings. About half of the topic units consisted of single statements. The remaining topic units included from two to fifteen statements. In these cases the first statement is called an "initiating statement" and the others are called "follow-up statements." Initiating statements were usually opinions about schooling, stories about school and/or personal experiences, and statements about one's knowledge.

I categorized the follow-up statements by attempting to convey the ways in which members responded to an initiating statement. I asked myself, "what are they doing with the topic presented in the initiating statement?" I created categories by cutting the statements apart from the transcript print-outs and moving them by hand into groups.

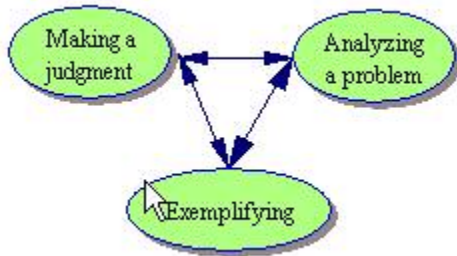
Once I had several in a group, I taped them onto Post-it chart paper and then moved the statements around (the tape could easily pull off) until I had groups of like statements. I started with 12 groups and narrowed them to 5 categories. The categories were:

- initiating statements (later these statements were absorbed into other categories)
- exemplifying
- making a judgment
- analyzing a problem
- feeling cognitive tension

I created a conceptual map to illustrate how the categories interacted with each other. I did this in two ways: sequentially and conceptually. First, I used sequence to determine the direction of the arrows when several members responded to a topic. Second, I inferred how a single member might have moved from one to another category given what they were saying (e.g., in a statement, an individual member might recollect making a judgment—"I used to think ..."—as he/she spoke about an example of how to teach—"this is how the teacher does it well ..."; I mapped this as "making a judgment" with an arrow pointing to "exemplifying"). In the conceptual map for the focus group transcript analysis, the nodes represented the five categories and the links represented the sequence by which members made follow-up statements. Britt (1997) suggested that the labeling of nodes in a conceptual map is done in the same way as the development of grounded theory concepts (Strauss & Corbin, 1990; 1998); that is, by the cyclical and tentative organization of data into increasingly consistently meaningful groups. Having already gone through that process to develop my category labels, I simply used those labels as the

nodes for my mapping. The nodes were labeled: initiating statements, exemplifying, making a judgment, analyzing a problem, and feeling cognitive tension. In the map, initiating statements rested at the top and bottom as the input and “new conceptions” rested at the bottom as the output of cognitive processing. The other nodes represented the ways in which members seemed to process those statements. While this original map seemed very informative of the more microscopic process by which members considered conceptions during the focus group, it did not fully represent the ways in which members’ conceptions shifted on a macroscopic level from the course’s beginning to its end. However, from the original conceptual map, I noticed that there was a feedback loop.

Figure 3.1. Feedback loop from focus group analysis.



Feedback looping (Britt, 1997) illustrates when “changes that take place in [one node] have effects that, in turn, have implications for the status of the original map” (Britt, 1997, p. 94). They are especially important for data analysis and interpretation because they show inter-related processes and can provide a way for interpreters of a study to address more effectively issues related to the process being described (Northcutt, 2002). Therefore, I kept this part of the focus group conceptual map as part of a larger conceptual map (constructed from analysis of all data sources) because it offers some

leverage for analysis. In addition, to more fully answer my second research question, I returned to the larger data set to more fully answer my second research question.

First, I analyzed the interview transcripts by dividing them into statements. I then placed each statement into a cell in an Excel spread sheet. I was able to categorize the statements by rereading statements and identifying key words. I conducted a search/find using Excel to locate key words and categorize statements. Some statements did not include any of the key words; therefore, I reread the full statements and determined what category they would fit. Some of these statements fell into categories already developed in my focus group transcript analysis. Other statements indicated that members were attending to or seeking particular sources for understanding. Some statements were indicative of initial or new conceptions or described a struggle that the person went through to get to their new conceptions (e.g., a member would say something like, “I used to think that...but now I think...”). Thus I maintained and built upon the categories from my focus group analysis by adding five more categories based how participants were considering sources and integrating them into their talk, using a total of eight categories to describe the full data set.

Second, I analyzed the class field notes and the class artifacts. Much of these data were not direct descriptions of thinking (with the exception of the ABCs projects), but I used these data in addition to the rest to infer what processes might have taken place. By using the full data set, I was better able to understand learners’ cognitive processes more holistically rather than as snippets of data. I sifted through this data to find quotations or summaries indicative or informative of the members’ ways of learning about topics. I

added data from this analysis to the Excel spreadsheet on which I had categorized the interview transcripts and shifted my category scheme to include all of the secondary data sources: interview transcripts, class field notes, and class artifacts. My categories remained stable after this final stage of data analysis; I still had eight categories.

I developed a conceptual map to illustrate how the members might have developed conceptions related to the course. I did this by creating nodes using the eight categories derived from my second round of analysis and linking them in meaningful ways. First, I took snippets of their interview transcript or focus group transcript and created “mini-maps” to represent their thinking and to get a feel for how many different ways the nodes might link. I linked the nodes in as many ways as I could conceive that members might have developed conceptions, thus creating a “cluttered” conceptual map. Creating a “cluttered” map is a way of assuring that as many possibilities for connection as possible have been accounted for prior to simplification (Northcutt, 2002). Second, I simplified the conceptual map by reducing redundancy in the links and reorganized the map to make it less cluttered, more easily communicated (Northcutt, 2002), and to better represent the data set as a whole.

Case analyses: Identifying individual differences in learning. Analyses from rounds one and two were then used to inform two case studies. These cases were selected purposefully to show the dynamics of how each one developed conceptions during the semester. According to Patton (1990/2001),

the logic and power of purposeful sampling lies in selecting information-rich cases for in-depth study. Information-rich cases are those from which one can

learn a great deal about issues of central importance to the purpose of the research, thus the term purposeful sampling. (p. 169)

Additionally, case analyses are useful for providing thick description of individual experiences (Patton, 1990/2001). I selected these two cases because I had many data sources associated with each case and the data related to each case suggested very different learning experiences. For each case, I pooled all of the related data, including member's class assignments, online responses, quotations from class and focus group transcripts, as well as their follow-up interview transcripts and individual conceptual maps and produced an Excel spread sheet of the aggregated data. I read and reread these items, noting which codes were present. I then wrote out a full-length summary (approximately 20 pages) of the topically related changes for each case by tracking their conceptions related to topic. Finally, I reviewed their individualized conceptual maps developed in round two of my data analysis to understand more fully the ways in which each member seemed to develop conceptions in various contexts (e.g., in focus group meetings, interviews online responses, and class discussions) and created a list of ways in which that member came to understand topics. These cases are presented in Chapter Six.

Assuring the Credibility of the Study

Although any study is never without researcher bias, in my study, I incorporated several techniques to ensure the quality and credibility of my data. First, I had a “prolonged engagement” (Lincoln & Guba, 1985) with the participants in multiple settings. Second, by attending course from the beginning of the semester onward, I felt confident that I had managed to become one of the group. Over my four month involvement, I had time to “[learn] the culture, [test] for misinformation introduced by distortions either of the self or of the respondents, and [build] trust” with my informants long before our individual interviews took place (Lincoln & Guba, 1985, p. 301). I was also able to capture details about how members of the class interacted within and outside the class.

In addition to my prolonged engagement with the group, I triangulated my data sources by including in- and out-of-class data. My field notes from class meetings and the artifacts written by the students supplemented my focus group and individual interview data. By using multiple sources for data, I was better able to perceive the fuller meanings of members’ statements as they were communicated in various modes of discourse.

I used the focus group meetings and follow-up interviews as a means for checking my interpretations of participants’ understandings. In all of our conversations (group as well as individual), I asked “what did you mean by ... ?” or “what do you think about ...?” or “so are you saying ...?” as a way to compare my own interpretations of their statements with theirs and to better understand how participants were conceiving of topics. Also, after I wrote both case studies, I sent (via email) each participant her own case and asked

for her response. One participant sent her case back with a few minor corrections which I incorporated. The other participant sent an email back indicating that she had received the case but did not give any feedback.

I rarely talked to the course professor about my interpretations of what was going on in the class and never talked about the focus group discussions during the semester. When we did talk outside of class, our conversations were usually about our families or other projects that we were working on together. Any talk between us with regard to the course was more about what activities and children's literature she planned to use in the next class meeting, how I would get class artifacts, or how we would schedule the focus group meetings. Following the semester, as a way of gaining another perspective, I asked the professor about her interpretations of the teachers' learning. This took place during her follow-up interview.

Finally, throughout the process of data collection and analysis, I met with my dissertation chairperson on a weekly or biweekly basis to review what I had done so far and discuss next steps; these discussions served as "peer debriefing" sessions (Lincoln & Guba, 1985). She also read over several of the transcripts during my initial coding phase, thus serving as a peer reviewer and verifying the reliability of my categories. Our meetings helped also me to sift through my initial perceptions and "obtain emotional catharsis" (Lincoln & Guba, 1985, p. 308).

PRESENTATION OF FINDINGS

Findings from the study are presented in the next three chapters. In Chapter Four I address the first research question, revealing findings about participants' conceptions about the course content, as gathered through interviews, focus groups, online responses to reading, and other data sources. Chapter five addresses the second research question and presents findings from analyses of participants' cognitive processing of the conceptions as they were constructed. In Chapter Six, I present case studies of two participants, addressing the third research question by combining the analysis of conceptual shifts and development process for two participants.

CHAPTER FOUR
PARTICIPANTS' CONCEPTIONS ABOUT THE TOPICS
PRESENTED IN THE COURSE

In this chapter, I present findings to address my first research question: What are the teachers' conceptions about course-related topics? How do their conceptions shift?

This chapter is organized around the major course topics: culture, language, literacy, relational connections, and equitable educational opportunities. In this chapter's five main sections I describe members' conceptions regarding the course related topics and how their conceptions changed during the semester. Each section in this chapter begins with a brief description of one of the topics and the course professor's stated goals, discussion of, and assignments related to that topic. Then I describe the various ways in which members approached these topics. My use of the term conceptions is intended to portray the fluidity in how topics were considered by individuals. Members' conceptions shifted and changed as they proceeded through cognition. Explaining the professor's intentions and assignments first is simply an organizing structure for the chapter itself and further contextualizes the members' learning. I want to make clear that I am not suggesting that there was direct transmission of knowledge from teacher to the learners nor a linear progression from naïve to "knowing." Members of the class were responding to the professor's intentions, but they were also responding to other members and experiences they had outside of class.

Conceptions about Culture

“Conceptions about culture” are statements in which members described or specifically addressed culture. This category is a combination of three sub-categories: “defining culture and cultural groups,” “examining one’s own cultural biases,” and “teaching about cultures.” In a class about culture and linguistic diversity among students, it is not surprising that Lauren, the course professor, intended to explore culture within the class. As she put it, “I wanted them to see that they, too, had a culture and that they needed to be sensitive to their kids’ cultural backgrounds.”

Lauren carried out her goals in a variety of ways. For example, Lauren selected a textbook (Nieto, 2003) and several readings that specifically addressed the nature of culture (e.g., Schmidt, 2001; Twiss, 1997/1998), discrimination and privilege (e.g., Delpit, 1991; McIntosh, 1988), and means for exploring other cultures through instructional methods (e.g., Worthy & Bloodgood, 1993/1998). One of Lauren’s primary goals was to get the members of the class to understand that culture is “multidimensional” (follow-up interview). During the second class meeting, Lauren led a lesson to explicitly address this goal. She asked members of the class to bring in a bag of items relating to cultural influences on their lives. After the teachers discussed what they had brought in their bags in small groups, Lauren led a discussion among the teachers about how their items related to their cultural backgrounds. Lauren then wrote a list on the blackboard of potential cultural groups to which people might belong, including: family, nation, community, church, work, school. She asked the members to think about “cultural norms,” saying “culture is in everything; it’s in the way we talk, the values that

we hold. ... greetings ... interactions ... our clothes. ... culture is not static” (field notes [fn]1-29). Lauren also assigned a project that utilized Schmidt’s ABCs model for teaching about cultural diversity. For their ABCs project, members created their own “cultural autobiography” in which they wrote about how their experiences within groups (e.g., family, religious affiliation, nationality, racial group, etc.) had influenced their thinking and understandings about their world. For the project, they had to interview someone “culturally different” from themselves and create a cultural biography of that person. Also as part of the ABCs project, members were asked to draw a Venn diagram comparing themselves to their interviewee, write a short comparison paper, and create a one-page “communication proposal” describing how they might use their knowledge for teaching. Also embedded within the design of the course was the assignment to create a series of lessons (called a literature unit) to teach students about cultural groups and how to sensitize students to their own cultural backgrounds. In talking about culture, members related their definitions of culture and cultural groups, examined their cultural biases, and discussed ways to teach about culture.

Defining culture and cultural groups. In the statements included in this sub-category, members focused on defining culture or describing groups of people as cultural groups. Participants, including Lauren herself, identified racial and ethnic groups as illustrative of cultural groups. For example, Jen told me during her final interview, “The students that I work with in my class are definitely multicultural. But I know not everybody has had that experience.” When I asked her to explain what she meant by multicultural, she responded, “Well, when I was doing special ed. the majority of our

students were African American, Hispanic, and Asian. And there were very few White children.” In another example, during the lesson in which the members were redefining the term “culture,” several members described how their own ethnicity might affect their cultural background. During this discussion, Anna said that her White family might react differently to a crisis situation than a Hispanic family.

However, there were times when participants’ statements suggested that they were questioning or broadening their views of culture—going beyond definitions based just on race and ethnicity. For instance, during the start of the third focus group meeting, Karen and Maya were talking about the literature unit assignment Karen had planned to create a unit about homeless people as a particular cultural group. She wondered aloud, “Is mine still going to be a multicultural literature unit ... because I was thinking [of making a unit about] poverty, abuse, homelessness...?” Maya responded with the idea that cultural norms can sprout from any group of people, not just racial groups, saying, “You know what? Culture is not just race ... and that’s [poverty is] a culture ... people are different because of what you think is important, right?” In addition, Joyce also disrupted this race-culture correlation in a statement she wrote as an online response to an article about the need to redefine culture as a system of values held by people (Twiss, 1997/1998), writing, “I have come to the conclusion that cultural differences stem from not only the color of your skin, but more particularly from the unique family that each of us is born into and culture refers to more than music, food, or history, as Twiss said.”

By the conclusion of the semester, several other members’ comments illustrated conceptions expressing that cultural understandings occur from a multitude of social

affiliations. This was especially evident in their ABCs project assignments where the members wrote about cultural influences on their own ways of thinking and acting in their cultural autobiography. All of the members identified their religion or spiritual beliefs as personal cultural influences. Several also mentioned their families (parents, siblings, husbands, children, and grandparents), groups related to their educational level and areas of interest, professional groups, social class, and national citizenship. Karen told me during her follow-up interview,

Before the class if somebody said ‘culture’ to me, I would have thought of somebody in France. Somebody in Mexico has a very different culture than me. But the person next door who could have been raised in Austin by a Christian but a non-church-going family, somebody very similar to me, can still have a very different culture. They’ve had a totally different experience. And so I think that your culture can be in all different realms. I think it can be your country culture, your family culture, your city culture—I mean, our city culture is very different from Houston and different from Dallas. But we’re all living in Texas ... it’s just all of our experiences.

Jen suggested that cultural affiliations stem from, “a lot of things. I think that culture is just relative to who you are, the environment you grew up in, but also the world around you” (interview). Maria told me that culture, “is about your values, ideas, your thinking, the ways you think, the ways you’ve been raised ... I think we’re all sort of like a melting pot, so everybody has their different cultures” (interview). Maya suggested that cultural groups might even be determined in part by the professional affiliations that people hold

She used teachers as an example, saying “The teachers in our school [at TMU] come from different cultures than the teachers [at the elementary school where she works] that I’m learning with right now. What I’m learning here [at TMU] is just totally different from the perspective that they have. ... it’s just a different culture” (Focus Group 3).

Examining one’s own cultural biases. Another of Lauren’s goals, which she explicitly taught in the course, was to sensitize members to their own cultural biases. Lauren addressed this in the ABCs project as well as in class discussions during which she confessed her own biases and encouraged others in class to do the same. Although the idea of one’s own bias was not often discussed in focus groups, the idea evidently resonated strongly with several members privately. For example, in the first online response, Joyce echoed on Nieto’s (2003) call for readers to “examine our own biases” and went on to discuss how her own learning experiences as a “hearing” person might influence how she teaches her deaf students. In another example, Anna also echoed this need for sensitivity in her ABCs project report, “We all have stereotypes embedded into our being and they come out when we least expect it and when we think we’re not being biased at all.” After the semester’s end, Karen said, “I realize that I do have cultural biases that I do follow, but that I have to be aware of that” (interview). Maya took it even further, telling me, “You’ve [we’ve] been basically brainwashed by our culture” (interview).

Teaching about cultures. Each class meeting, Lauren brought text sets focusing on particular cultural groups. The value of exposing students to other cultures was specifically addressed as part of the ABCs project. In the assignment, members were

required to interview someone “culturally different” from themselves in order to explore cultures beyond their own, and this process was modeled for the class when a male graduate student from India came to the third class meeting to answer questions posed by the group about his upbringing and cultural influences. This project and the guided interview of someone culturally different were examples of exposing another’s culture and might have provided some fodder for thought about this particular idea.

In several statements, members described ways to teach about culture—both by teaching about “others” and/or by sensitizing students to their own cultural backgrounds. For instance, while discussing whether or not a novel offered for instruction must reflect a culture to which students belong, Karen claimed that giving students information about cultures other than their own is valuable for students:

You’re not giving them multicultural education and teaching to every child if you’re selectively choosing what you think is the norm for that group [i.e., the group of students you are teaching]. And you’re also not broadening that horizon. ... if you’re giving them a lot more information, then they say I’m not really interested in my own culture, but isn’t *this* fascinating? (Focus Group 1).

Several of the literature units created by the class members had the same goal: to teach students about different cultural groups. For example, Nena and Maria’s jointly produced unit was about exploring an artifact of cultural affiliation; theirs was a unit about homes in which they offered a variety of texts that took place in different homes: apartments, trailers, animal dens, shelters, houses, “safe places,” “homes in other places (countries,

cities [vs.] farms).” In another example, Karen and Anna’s literature unit was about “homelessness and poverty” and the goal for the unit was:

to teach students that anyone could be living in poverty or without a home, and we all need to accept one another’s differences. Students need to be aware of hardships, losses and/or other issues that lead some families into poverty and homelessness. Understanding how and why this happens, and who lives in these conditions can open students’ eyes to acceptance and tolerance of people’s differences ... The goal is for students to see and value the similarities in people and understand that our similarities are greater than our differences. (Literature Unit)

In her follow-up interview, Karen mentioned that students need to learn about this culture, “so that they are more sensitive to people who don’t have as much.”

Teaching others to be less discriminatory was also part of the course goals and was given as a reason for teaching about culture. At the end of one of the sixth class meeting Lauren showed a video called *The Eye of the Storm* (ABC News, 1970/1991) depicting a teacher’s implementation of simulation lesson about discriminatory practices. In the video, the teacher told the children that “blue eyes are better than brown eyes” and that children with blue eyes deserved certain privileges. This video was the subject for several comments, especially in the third round of online responses. For example, Nena wrote, “I was pleasantly surprised by this video because the teacher taught a sensitive subject to a group of students who possibly did not have a lot of interaction with diversity” (online response 3), and Jen wrote, “The teacher in the video ... paved the way

for more modern thinking” (online response 3). Additionally, Anna and Karen wrote that they designed their literature unit about homelessness because “students need to be aware of prejudices around them in order to understand them and become more culturally sensitive” (Literature Unit).

Conceptions about Language

Lauren addressed issues related to language and teaching in several ways. She assigned readings that described ways of teaching multilingual students (e.g., MacGillivray, Rueda, & Martinez, 2004; Nieto, 2003) and about bilingual education (e.g., Worthy, Rodríguez-Galindo, Assaf, Martinez, & Cuero, 2003). She also provided a few examples of children’s experiences as speakers of languages besides English in the U.S. by reading/discussing two children’s stories (*Esperanza Rising* [Ryan, 2002] & *Pepita Talks Twice* [Latchman & Delange, 1995]) in classes four and six respectively. During the sixth class meeting, Lauren told the class that “you can’t separate culture from language,” explaining that languages are inherent to cultures and communicate specific meanings within cultural groups. A bilingual woman came as a guest speaker on the twelfth class meeting to describe the challenges she faced as she grew up going through bilingual education programs in public schools and speaking two languages within her family and community. As the semester progressed, members’ statements indicated that they were conceiving of new definitions for language, and they told how languages might be used in instruction.

Defining language. The term *language* seemed to mean two things to participants, although these definitions were not usually explicitly expressed. Sometimes language

meant national language, like Spanish or English or French. For instance, in the second focus group, the discussion was about how to change standardized tests so that they would be more relative or responsive to children of diverse backgrounds, and Joyce suggested that the test should be written in Spanish or French or whatever the child's "heritage language" is. In contrast, languagesometimes was more broadly defined, beyond just a simple conception of national languages. In the same focus group discussion about testing, Tony responded to Joyce by saying, "it would still be *academic* French." Comments related to both definitions seemed to occur throughout the semester. However, there was a growing number of statements indicating a broader conception of language as the end of the semester neared. For example, in her follow-up interview when I asked Anna to tell me what she thought of when I said the word language, she told me: "[language is] the words or actions that an individual or group can carry in order to speak of things in their own terms. Language is not just the word itself but the meaning behind it" (interview). During the third focus group meeting Jen said that she was working with a third grader who had "no language." By that she meant that the child "hasn't mastered either language [Spanish nor English] yet." In her response to Jen, Nena broadened the definition of language to include receptive as well as expressive language:

I've heard it [the "no language" label] at my school. I've heard it especially with children in special ed. because there's a kid who comes from special ed. to my classroom. And when I was first introduced to the children and did some background on the children, it was like "the child has no language." And I thought [she makes a confused facial expression]. And the one child I'm thinking of right

now, he doesn't talk. The only thing he says is "ma" every once in a while. ... but the thing that I don't understand is that little guy has a lot of language. You don't hear it. You hear the ma, ma once in a while. But he's got a lot of language because when I interact with him—and especially the [instructional] aide that comes with him—we talk to him. We do things with him. And he does things that the other kids do. You know, he's snapping cubes, and stuff like that. But that's only from me telling him; I'm not showing him.

Using language for instruction. Several of the comments were about which/how language should be used for instruction and/or assessment. In the beginning of the course (prior to the discussions about bilingual education led by Lauren), a few members stated that instruction should be carried out in English only. In one example, the class was discussing the Language Experience method and Lauren suggested that teachers write the children's own words (fn 2-26). Several members took this to mean that some children would not speak in English; therefore the teacher would either have to write in Spanish or change the students' words to English. Karen responded to her classmate's comments, saying, "If they talk in Spanish, I'm not going to know what to do." And Jen said, "We have lots of kids who don't speak English and the other kids jump in. But then you've got to say no, you have to speak English." However, Nena, a bilingual teacher herself, said, "But it's a neat opportunity for the kids to teach you." A few weeks later, Karen suggested that school instruction should be in English, saying "If you go through your entire education never being taught in English, you're never going to learn it" (Focus Group 2). After Lauren's lessons related to language, some participants seemed to echo

Lauren's perspective (and that of the authors of the readings) that teachers should use children's home languages as building blocks for instruction. For example, during the fourth focus group, as we were discussing how a bilingual student should be instructed in literacy, Maria suggested that there is also a need for connections between languages spoken in the classroom:

they have to get comfortable with their first language, get *very* comfortable with their first language, so that they can make the translation into the other language that they have to learn.

But some statements also indicated that members struggled with knowing how to carry out that goal. In the third focus group, Jen told about her experiences teaching a bilingual student and solicited advice from the two bilingual speakers in the group, saying, "I was going to ask one of you two (pointing to Maria and Nena) earlier tonight just to get a bilingual feedback because you all have bilingual classrooms." In another example, Maya, in her follow-up interview, mentioned that she wished she had learned more about how to teach students who speak Spanish and English. She told me,

I know there's a big argument on whether you should or when you should cut kids off from Spanish. When you should expose them to English. Whether you should to expose them to a little bit of both. And just all that conflict about being able to speak both languages, or how they translate for their families. It's just that's a big, big thing. ... and I think Nena (another bilingual speaker) had a lot more to contribute about that ... And so I would have just liked to have heard more from her.

Conceptions about Literacy

Participants' conceptions about literacy focused both on definitions of literacy as well as instructional strategies for literacy development. Lauren told me that expanding members' conceptions about literacy to refer to texts and instances beyond school-related literacies was one of her goals. The fifth class meeting was dedicated entirely to defining the term *literacy* (fn 2-19). Lauren wrote the question "what is literacy?" on chart paper.

The class divided into groups and wrote their answers:

- learning about books
- concepts of print
- reading/writing
- letters/sounds/words
- recognition of signs and symbols
- numbers
- comprehension
- recognizing types of sentence structures

Lauren then asked the class to recall their experiences with literacy growing up within a religion (citing that most of their autobiographies had referred to religious upbringings). She suggested that literacies are contextualized; that knowing how to be literate changes depending on the time and place. Then she told the members that literate practices can take place in any setting, including in a church (she added that most of the members had referenced their religion as influential in their cultural autobiographies). After giving her own example growing up in a Catholic church in which she, for example, read scriptures

in the Bible, responded at appropriate times during the service by reciting particular phrases, and sang songs written in the hymnal, she asked the group to compare how they learned literacies in religious settings to how they learned in school settings. Together the class redefined literacy using a new chart, echoing terms they had heard Lauren explain.

They included:

- processing
- signs/symbols
- environment plays a role
- equal to understanding
- reading/writing
- meaning/comprehension

Several of the course readings also reinforced this expanded definition of literacy (e.g., Moll, 1992), and a few of the course readings specifically gave suggestions for how this might affect literacy instruction (e.g., McMillon & McMillon, 2004).

In addition, Lauren *showed* ideas for literacy instruction during classes. She brought a text set of related stories each day to class, displaying them on the front desk and explaining at each meeting how the stories related to a common theme and briefly described how the stories might be used for instruction. However, Lauren addressed her goal to “give them practical ideas” primarily by providing model lessons throughout the semester. In the sixth class meeting she demonstrated the Freirian word method for literacy instruction. In the eighth class meeting, she also modeled KWL charting and Language Experience using several texts about the 1960s Civil Rights Movement in the

U.S. This lesson was followed in the tenth class meeting with a hands-on activity during which members created posters to display summary information (via writing and visual art) from a short text. In tenth and eleventh class meetings she showed members how to create their own units based on collections of children's multicultural literature, and how to practice and create a readers theater script from storybooks.

Defining literacy. At various points in the semester, members referred to Lauren's earlier lesson in which they had discussed and charted definitions for the term *literacy*. For example, that evening we met for a focus group meeting, and I asked members of the group to respond in writing to the question, "Do students who are linguistically and culturally diverse—from diverse backgrounds—do they learn literacy differently from "other" children?" Maria immediately asked, "so are you talking about literacy in the schools now? Or are you talking about their environment?" (Focus Group 1), perhaps referencing the statement "environment plays a role [in literacy]" listed on the chart still hanging in the back of the room. In responding to Maya's description of a P.E. teacher who effectively engages children in learning, Karen also seemed to borrow words from the chart to define literacy. Maya told us,

even though it's PE class and they're supposed to be getting physically fit and all that kind of stuff, he has "coach's score board." So he connects to the San Antonio Spurs just because everybody thinks of that. But he also does math, geography, just with the coach's score board. Every day he gives out prizes. So he makes it fun—one. Two—he's connected to what's going on right there in our town. But then he expands it into geography because he puts up the United States

map and he says okay, they're getting ready to play this team next week. Who can tell me where that is in the United States? Okay, what's the name of that capital city? What are they primarily known for? And they get points for that. And then he says, okay last night they won by this many points. Okay add that up for me right quick and what are you going to get? ... So he does it. And they're all into it. And they don't even know that they're doing math and geography—

Pointing to the chart, Karen exclaimed, “By our definition of literacy, he's also creating a literacy environment for them ... making them more literate.”

The chart was referenced later in the semester as well, as the participants discussed their conceptions of literacy. For instance, during the fourth focus group meeting, Anna responded to a question posed to the group about children's literacy learning and referenced the chart as she tried to explain her conception of literacy. She said, “our backgrounds are so different in literacy. It's like—where's that chart that we made in the beginning—what literacy was and not just being able to read out of the book.” Maya referenced it in her interview, saying,

When she [Lauren] asked us to define literacy that day on the board and wrote all that stuff that we thought was literacy and finding out that we knew nothing. [laughs]. That wowed me right there. Just learning that literacy is more than reading and writing. It's how you communicate. It's when you go to a restaurant, you're able to read the menu. Just a restaurant even. All of that plays a role in literacy. Just learning all that—that wowed me. Because I look at everything

around us now and I'm looking at how it speaks to me, what language, how it's spoken, art. (interview)

Literacy was defined broadly by most members of the course by the end of the semester, and many comments indicated that some new conceptions were going beyond "the chart," and their explanations illustrated the extent of deep reflection their thinking involved. For example, Maya told me,

I kind of thought literacy—even though I had taken Lauren's class before, and I knew that literacy was part of like writing—I still thought it was more like written language and reading. I didn't think it was so much about everything that goes on with writing and that your culture was part of it. Well, I knew that somewhat, but I knew it so much more by the time the class was done. You know, I never thought of literacy as a way of communicating. I just thought it as kind of as interesting, like the things that you bring in, and things that you learn but not actually what you put out." (interview)

And Nena said,

I just thought literacy was print and the stuff you see on the surface, but it's deeper than that. So I guess, to me, literacy now is just an understanding. And it can come in so many different ways, not just print. (interview)

In all of the other interviews, members expressed broadened conceptions about literacy beyond print and reading. In contrast to Nena's broader definition of literacy, in her follow-up interview, Maria defined literacy as "reading, comprehending, fluency."

Describing instructional strategies. Not surprisingly (given that this was a group of teachers), comments about literacy also focused on strategies for reading and writing instruction in school. In one example during a focus group discussion about testing, Maya commented on the over-emphasis on test-taking strategies in her son's classroom. Jen responded by citing the need for teaching test-taking strategies as a way of supporting reading development, saying "Some kids need a map to follow ... and so doing those strategies gives them a map to follow and helps them get better" (Focus Group 2). Later in that discussion, Maya described the need to introduce a story as an instructional strategy, saying:

When you read to a kid, then maybe you should introduce the story in some kind of way before you start reading it to them and then they're like 'Ah-ha, oh, I want to hear what's going to happen next.' Or maybe you'll tell them the story a little bit out loud before you actually read it. (Focus Group 2)

Several comments identified the usefulness of connecting concepts by tying prior knowledge to new information as students learn about reading and literature. For example, Nena noted the need for teachers to incorporate time within their schedules for students to respond to literature:

Teachers should not pour knowledge into them but pour knowledge out of them because ... children have a lot of prior knowledge. The way they express themselves is not so important as compared to that they just express themselves. ... [by] weaving time in the lesson for children to 'construct their own text.'

(online response 1)

As a way of bringing up the idea of personal connections to literature for discussion, I showed a video clip during the first focus group meeting of fifth graders discussing *Esperanza Rising* (Ryan, 2002). In the story, the main character Esperanza describes going through immigration at the Mexican/U.S. border; in the video, the students were discussing their own experiences with immigration. The members seemed unanimously to refer to the need for cognitive connections as necessary for successful literacy instruction. Maya explained that this was an example of effective literacy instruction because “They’re able to make connections because some of them have experienced it” (FG1). Karen suggested that a teacher can teach literacy by “asking the children to comprehend ... reading back and asking for comprehension, asking for prediction, and asking for meaningful connections to life.” Nena stated that by drawing out connections between a child’s background and a story, a teacher can “make [instruction] more meaningful per child” because it “kind of affirms that they have something to contribute.” Joyce said, “I don’t think you can make a connection if they have no experience to connect to.” Later in the semester, during the fourth focus group meeting, Joyce stated, “I think all children learn in the same way: through connections they have to past experiences. Connections they have and connections they make to the future”; Maya agreed, saying, “they will all have different connections. But they all start with that.” Maria responded to Maya’s comment, saying that by using the term *connections* “you mean prior knowledge.”

Assessing literacy. Lauren did not explicitly address or model methods for literacy assessment within this course. There were, however, several informal conversations

about high-stakes testing during the semester, and high-stakes testing was addressed explicitly in the fifth class meeting via discussion. Early in the semester, the members' talk about literacy assessment focused on standardized evaluations as well as ways to determine a students' level for instruction. For example, during the first focus group meeting, members had been talking about how to teach reading. In their descriptions of instruction the term *level* kept arising. So I asked members of the group, "How do you know what a level is?" because I wanted to understand what they meant as they used the term. In response to my query, they identified several ready-made curricula and/or evaluations. Sometimes these references were vague: Joyce said, "It's set up," and Karen responded, "[It's] supposed to be written down somewhere." Other times the evaluations were more specific; they mentioned the CAPS [a district-made standardized evaluation of early literacy skills] and TAKS [Texas Assessment of Knowledge and Skills, the state-mandated standardized tests] tests, district-made checklists of phonemic, phonetic, and letter and number knowledge, lists of words (high-frequency words for spelling; vocabulary lists; "challenge" words for spelling). Maya responded to my question about how literacy levels are determined, saying,

I think that it's a variety of things. I think the state mandates a certain, like you said, the TEKS [Texas Essential Knowledge and Skills, the state curriculum]. And they have testing to evaluate that. But then also the teacher evaluates the student. And then if they don't think they're meeting certain things, then the special ed. teacher is called in to evaluate the student. (Focus Group 1)

Jen added a description of how literacy is assessed in her school:

I think that—at least what I see in our school—is they start early on going through levels. As soon as they get into Kindergarten, they're given the CAP test. They are given—the district made up their own Kindergarten assessment and they're given that at the beginning of the year. And then, once they get into first grade they're given one other test. The teachers are encouraged to do different assessments on the students. (Focus Group 1)

Later in the semester, Jen described how she determines a child's level of literacy, saying she had evaluated a student whom she tutors by comparing that student's abilities to “a picture in my head based on the kids that I've worked with that third graders can do this, third graders can know this vocabulary, third graders can understand this concept” (Focus Group 3). Because Jen's student did not measure up to what was in Jen's mind, Jen referred to her as “struggling” and “a hard student.”

By the end of the semester, some of the members were open to using alternative methods as opposed to standardized forms of assessment but seemed unsure about what those assessments might be. In the final focus group meeting the guiding activity involved showing members thirteen artifacts as examples of assessing literacy (e.g., anecdotal records written by the teacher, home visit reports, standardized test results from two separate tests, interviews about a student's reading interests, student surveys, etc.) and asking the members to rate each method for assessment as more useful to less useful to instructional decision-making. During the activity, all of the members rated non-standard forms of assessment (e.g., notes from a home visit, anecdotal records, reading interest interview transcript) as their top three choices. There is evidence that this activity

might have affected the group. Several members told me during their follow-up interviews that they believed that a teacher should use multiple evaluations to understand what a student knows about literacy. With a few exceptions, many of these statements about literacy evaluations included ready-made tests in addition to “other things” (often vaguely stated). For instance, Maria said, “You can look at that assessment or that test and look at all the other stuff. You can’t just go with one” (interview). Likewise, Jen told me,

I think there’s so many different ways to assess kids. It’s not just the TAKS test. And it’s not just a DRA [District Reading Assessment, a district-made standardized evaluation of reading] or something like that. I think that when you’re assessing a child and when you’re evaluating a child, it should be a sum total of all those things. And so, do some DRA, do some TAKS testing, do some other things, take some reading rates, and then look at the whole picture. Look where you can say, ‘Well, I’m evaluating this child and this is where they’re at.’ (interview)

Maya concluded,

I used to only look at it [evaluation] as testing. I’m learning that it’s so much more, that you can assess kids in a variety of ways, that you can have knowledgeable kids. And you can assess them not just on written tests but you can do ability tests and you can assess what they know just in different kinds of group settings. And there’s just a broad range of ways to assess children. (interview).

Conceptions About Relational Connections

Members often discussed how relational or social connections between the teacher and student could benefit instruction and assessment for literacy as well as in any other content area. Lauren discussed this in class often. For instance, in the eighth class meeting, she described her own involvement with her elementary students when she was their teacher, saying that she used to do home visits regularly to learn about her students' cultural backgrounds (fn 2-26). Lauren also provided readings in which authors described how they took the time to get to know and understand their students' backgrounds and showed their caring (e.g., Bausch, 1999; Moll, 1992).

Some of the members' comments focused on a need for relational connections in order for a teacher to "know" her students' interests, needs, abilities, and motivators. For instance, Joyce wrote a response to Nena's comment that teachers do not need to pour knowledge into children, but rather "pour knowledge out of them." Joyce responded,

Nena, I like what you said about not always 'pouring into' the children. We do need to 'pour out of them,' also. As you said they have a lot of prior knowledge and until we are 'really listening,' we will not find this out! (online response 1)

And Jen stated, "I see so many teachers who are formal and do not want to get close to their students. Unfortunately, their students suffer" (online response 4). Anna reported in her follow-up interview that she hoped to be "a lover of souls, not just a person there to teach vocabulary ... Lauren's class really represented this." In another example, Nena described how her relational connection with one her students benefits her effectiveness as a teacher. She said:

I'm a first year teacher; I've got a lot of things imposed on me and I did it their way [referencing that her principal had told her that she could not meet with children's families outside of her classroom]. I've come to the conclusion that you can have it your way—like Burger King. You can say, 'I don't think so; in this situation I'm going to do whatever I want!' I go to the same church as some of my students. You've got to have the right rapport with a parent before you ask them to do a project for school. Affirming parents and what they do daily—one kid told me about a restaurant, so I told him to write me a map. The parent wrote down directions. I went that weekend—I got a menu and we talked. That really made a deep connection. A few weeks later, Dad came by and said, "Go on this day. The food's fresher!" (fn 3-4)

While many of these statements supported the development of personal relationships, some statements expressed a sense of ambivalence about getting too involved in students' lives. For example, during a discussion in class the members were talking about what happens when teachers know about their students' lives. Tony told the group, "[Students'] lives are so different from ours ... we need to spend time with a child and talk with them," and he went on to describe a female student of his who had written in her journal that she had spent the weekend with her father who was in the hospital because of a drug overdose. Tony said, "I was shocked" (fn 3-4). Jen added, "When kids are in a situation with parents who might be dangerous, you probably don't want to go to the parent" (fn 3-4). But this did not seem to be what Tony had in mind; he said, "We just need to find time to spend time with a child and talk to them."

The course professor expressed the need for caring student-teacher relationships as a means to undergird effective education (e.g., Goldstein, 1999; Jackson, 1994/1998; Twiss, 1997/1998); in contrast, some of the members believed in the need for caring student-teacher relationships as a means to provide care for a child who might otherwise not have a caring adult in their lives. During a class discussion about how to make relational connections with their students by reaching out to the surrounding community, Karen said,

Some kids don't have fathers, so my dad and brother would go to schools in [a predominately poor area] to show his truck so that the kids could say that they 'hung out with a guy one day.' So they're making connections ... these are some things that kids don't pay attention to because they don't have it ... (fn 4-8)

In response to Karen's example Anna added that her sister has an Easter party and includes children of a near-by orphanage each year "so the children can see the family units ... some of them [the children] are going to be messed up but if they're involved then that's really neat" (fn 4-8). Karen and Anna seemed to offer these as examples of how relational connections might be made outside the classroom. These few comments caused the course professor and me to wonder if some members' conceptions about the need for relational connections stemmed from a deficit perspective (Flores, Cousin, & Díaz, 1991) rather than an understanding that caring creates a means for effective teaching (e.g., Goldstein, 1999; Jackson, 1994/1998; Twiss, 1997/1998).

Conceptions About Equitable Educational Opportunities

Conceptions about equitable and inequitable educational opportunities seemed to crop up in many conversations across contexts, but were predominate in talks about testing, leveling, and tracking. The textbook (Nieto, 2003) and several readings (e.g., Kozol, 1991) for the course described inequities in the U.S. educational system.

Additionally, in the tenth class meeting, Lauren showed a PowerPoint presentation explaining the terms *racism* and *discrimination*. In the discussion that followed, Lauren explicitly addressed how schools might reproduce institutional discrimination. Members' statements in this category focused on ways in which schooling reproduces inequitable opportunities for various groups. Most often they compared racial groups, but at times they referred to students tracked into particular ability groups (e.g., high, medium, low).

In some examples, the teachers seemed to discuss whether or not children of different ethnic groups had an equal educational opportunity. For instance, during the second focus group meeting, the members were discussing how they might make the state-mandated standardized test more culturally relevant for students. Several students took *cultural relevancy* to mean that they had to assure that each racial group was represented within the test content and that each racial group would have an equal opportunity to pass the test. Maya said,

I think what testing does is it excludes children. It's basically a way to keep certain people out. Just like what we read in that article. You're teaching—you're telling kids that if they don't speak this certain language and they don't perform to these certain standards then they're not smart. They're not intelligent. They're not

capable of learning. And there are so many different ways to learn. (Focus Group 2)

Later during the same focus group meeting, Anna explained that the test was made for kids of “a certain culture” (i.e., Black kids) by arguing that the names used in a reading passage, Asante and Kareem (inferred by the group as names of Black children), would be confusing to White students in the predominately-White district where she had attended school. She said, “They’d be like, what’s an Asante?” As the conversation continued, Karen suggested that research on testing might “Go back over the test and say, ‘after looking and evaluating this test, we don’t think this ethnic group would have gotten question 3, 5, and 6 on this test.’”

Unlike with conceptions about culture, language, and literacy, wherein teachers’ conceptions closely resembled those intended by the course professor, there were several instances when members’ conceptions about equitable educational opportunities differed from the course professor’s. The professor focused on providing equitable educational opportunities for children of color, and/or who do not speak English as a first language, and/or who come from poverty-stricken communities (Au, 1998; Banks & Banks, 1997; Nieto, 2003; Sleeter, 2001); however, a few members addressed the need for equitable opportunities for White children and/or children from communities with vast financial resources, and/or those who speak English as a first language. Statements describing racial inequities were not limited to particular groups: some statements (such as Anna’s comment that White students were discriminated against when test questions used ethnically specific, non-White names) indicated that Whites were victims of

discriminatory practices; other statements indicated that Blacks or Hispanics were victims. Although the course professor believes that Whites are rarely victims of discrimination, this belief was not represented consistently in her talk nor within members' statements.

I found this to be particularly interesting given that the professor told me that she was very careful not to explicitly impose her own opinions on the group; she seemed to have done this successfully. Lauren explained her reasoning during her follow-up interview,

I was very aware of opening channels between people, so my personal objectives and goals were to let them use their opinions even if they differed from mine. And to be very careful not to challenge those. And to let them come out in comfortable ways. So they possibly would eventually come around, instead of knocking them down ... Letting them voice their opinions and feel comfortable in that class so that they would eventually change—that was my hope—that they see things differently.

Lauren had been aware of contradictions between her own opinions and some of the opinions expressed by members of the class, but she used the course as a way to expose all of the members to a discussion about their opinions and recognized that if she explicitly resisted opinions that differed from her own, she would essentially sever the back and forth communication necessary for learning. Lauren seemed aware that if members of the class viewed her as angry or biased they would have objected to her as a

source for knowledge and then might have become less likely to relate and respond to her as a source for knowledge as the semester continued.

Sometimes, equal opportunities for learning were dependent on the presence or absence of labeling children as having particular needs or abilities. In an example that took place during the first focus group during which members were describing how to level students for literacy instruction, Joyce warned that using tests to level students could lead to tracking and creates unequal opportunities because

... if you've got a kid that never tested into the GT program ... she is not going to say 'Put me in the high level'. She's going to say, 'I've always been in the medium level, I think that's where I belong.'

During the same conversation, Anna offered an insight from her substitute teaching experience. She had been reading with small groups at the back of the room and one boy, Nate, was not included in any of the groups. She said,

And the third group asked 'Who's Nate with?' 'Well, he's with Ms. Ryan.' And she's the teacher who comes in and takes their group out. ... He walked by the desk like five times and could never see what we were reading ... I don't understand that ... I don't understand the grouping for kids like that little Nate who doesn't understand why he doesn't get to read with the teacher. So I'm real torn on it because I understand it, but I hate it. (Focus Group 1)

Anna critiqued the use of grouping and pull-outs in elementary schools based on her experiences as a substitute teacher and also related it to her own experiences growing up

categorized as not gifted and talented (G.T.) when her brother had been labeled G.T. She told us:

I remember very well being an excellent student in all my classes until we had G.T. testing, and I didn't make G.T. but my brother did. It was so hard for me in third or fourth grade. And I—it killed me—and I was with the regular ed students. And I remember they always did the big projects. And they always did the young astronauts program with math and science. And it was so hard for me because I knew I was on their academic level—I made the same grades, I just didn't pass the GT test...And I don't know where the line is—like how to give them all equal opportunities. (Focus Group 4)

Summary

In writing about all of the topics that spread across the four months of the course, I am reminded that each of these ideas informed the other. Categorizing them is simply a way to understand the content of what was discussed in and out of class, but perhaps not indicative of how the ideas were developed by the learners themselves. Thus, the following section elaborates more on how these topics, and the conceptions related to them, might have interacted and connected in order to (sometimes) result in conceptual shifts.

CHAPTER FIVE

FINDINGS FROM ANALYSIS OF PROCESSES FOR LEARNING

In this chapter I address my second question: What are the processes through which the teachers' conceptions shift during the semester? I reexamined the data focusing on how the participants talked about the topics addressed in the course: Culture, Language, Literacy, Relational Connections, and Equitable Educational Opportunities. In Chapter Four, I describe the teachers' conceptions in general; for this chapter I analyzed their language, expressed in and out of class, to infer the ways in which participants' conceptions changed. I did so by using discussions of topics as instances of socially shared cognition and using individuals' statements as instances of individual cognition. Thus information from the two chapters should be construed as two dimensions of the same learning process: the developmental (what they knew, from pre- to post-conceptions) and the typological (how they understood). Taken together, these two dimensions provide a deeper explanation of what and how the teachers learned. In this chapter, first I describe the categories (the units) that describe how conceptions were processed and second how the categories interact (the links) to produce a complex process represented in the final conceptual map.

How Conceptions were Developed

I first determined how conceptions were developed by characterizing the teachers' statements as actions. In other words, I asked myself, "How are the participants processing the topic at hand? What are they doing with the topic in their talk?" I found that participants did four main actions: considered sources for knowledge, responded, felt

cognitive tension, and integrated knowledge. Each of these categories constituted a unit for processing. There are two units, considering sources for knowledge and responding, that each consisted of three sub-categories (sub-units).

Considering Sources for Knowledge

Three sub-categories related specifically to sources for knowledge. In these statements, members considered a source of information and knowledge, and either sought a source, applied a source, or objected to a source.

Seeking sources. Often members would wonder in the focus group or in class how they might learn more about a topic. They often asked the professor for sources (e.g., “where can I find information about...?”). They would also mention “wonderings” (e.g., “what I want to know is...”) or questions that they had. For example, in the first online response Maria queried her classmates, “I am wondering if a teacher is teaching other children about similarities in cultures, how do you get the teacher to accept what she is teaching the children?” Some participants would explicitly ask their classmates for their opinions. For example, in the fourth round of online responses, Karen sought the knowledge of her classmates, asking about a phrase used in one of the articles they had read (McMillon & McMillon, 2004). “What did the article mean ‘to invite the church into conversation,’ and how would this work in our school system with separation of church and state?”

Applying sources. In some statements, members seemed to borrow meanings from other sources (e.g., authors, classmates, teachers, the course professor) or to report their own experiences. In these statements, members seemed to report information as

“objective” interpretations much like a reporter might try to do. Sometimes they explained what another person had told them (e.g., “teachers in my school say...”; “didn’t Lauren say...” “this is how vocabulary instruction occurs in my school...,) or summarized what they had read (e.g., “according to Freire...”). For example, when I asked the first focus group how they knew what vocabulary words to teach (in response to a discussion about whether or not students were “on level” if they didn’t know “the vocabulary of that grade level”), Maya said,

it’s set up in the curriculum. Do you guys have this at your school? The Four Blocks? ... They teach the kids the same words every year in this—they have keyed-in that there are certain words that kids just don’t know how to spell and know the meanings of....

Maya went on to explain how Four Blocks word study works at her school. Members sometimes quoted directly from the readings, often in their online responses and occasionally in class discussions (“Freire says ...” or “in the book it said...”).

Objecting to sources. This category represents statements in which members expressed resistance to a particular source for knowledge. Sometimes members would say that they distrusted or disliked a particular source for knowledge. For example, in the round of second online responses, Jen wrote, “When I read Nieto, I feel like I am just reading one big editorial. I wish she would give more recent facts and studies to support her opinions.” Some members mentioned that they would not listen to sources in their school. For example, in her follow-up interview Maya said that as a beginning teacher her “responsibility will be not to cooperate” with what her administrators told her to do; in

the last class meeting Tony said he was going to “close my door and teach” to avoid hearing what other teachers told him to do.

Responding

This category consists of three sub-categories that seemed to be reciprocally related: making a judgment, exemplifying, and identifying problems.

Making a judgment. I labeled the statements as *making a judgment* when members explicitly judged ideas or examples as being good or bad, right or wrong. For example, when another member would offer a story describing an effective teaching method, another member might say something like, “That’s wonderful!” and go on to explain the judgment. In contrast, sometimes members reacted negatively to a story about teaching or an opinion (e.g., “That’s ridiculous”; “How can they believe that!?”). For example, during a class discussion about how standardized tests are translated for Spanish speakers, Maria mentioned that Spanish translations are never completely accurate because there are so many variations of the Spanish language. Karen agreed, saying, “Test makers have made these tests thinking that it’s accessible, but it’s really not.” Sometimes these statements seemed to be snap reactions to others’ statements (e.g., after hearing another’s description of what happened in her school a member might respond, “That’s great!” or “How horrible!”); other times these statements were followed up with support (e.g., “That’s great because teachers should teach reading by...”).

Exemplifying. In these statements members told stories or created scenarios to show how a conception might play out in “real” life. Participants told stories or crafted scenarios to illustrate how some aspect of instruction or schooling is or could be more

effective, often taking the form of “what if...?” scenarios. For example, during the second focus group discussion Karen wondered aloud what a teacher, who is told to use a particular method for instruction, might do to address the needs of students who come with differing abilities:

So what if a teacher went in and said that they’re teaching these strategies, make sure that the kids get them, and then maybe give them choices or options?

Because each piece [of a particular method] may not be called for as well. But if you don’t [a student doesn’t] feel like answering questions—if you don’t get it right—obviously we’ll [the teacher and student will] go back and maybe you [the students] should use those strategies if they weren’t used already.

Other times, these were stories about teaching that members considered effective or ineffective. For example, in the first focus group, Maya told about a P.E. teacher at her school who she thought does an excellent job of integrating content-area factual knowledge and students’ interests by asking children quiz-type questions related to the San Antonio Spurs basketball team and rewarding them for correct answers. She said,

He connects the San Antonio Spurs ... but he also does math, geography, just with the “Coach’s Score Board” [a bulletin board]. Every day he gives out prizes. ...

He’s connected to what’s going on right here in our town.

Other examples in the exemplifying category came from participants’ lives. For example, in Karen’s fifth online response she offered examples of trying to learn a new language in response to readings that described how to teach English Language Learners

(e.g., Nieto, 2003; Worthy, Rodríguez-Galindo, Assaf, Martinez & Cuero, 2003). Karen wrote,

My mom [a German immigrant to the U.S.] told me before that the hard part about learning English was not understanding what nouns, verbs, etc. were in German, so it was hard to follow that type of instruction in English. I had the same problem trying to learn German.

Identifying problems occurred when members pointed out a problem. For example, when Jen told about her experiences tutoring a bilingual third grader who was struggling to learn to read, Jen described her problem as such: “I’ve got to get her to the point where she can pass this test! Let’s worry about this other stuff later.” In another example, taken from the third focus group transcript, Maya explained a different problem in response to the group’s discussion about how a teacher might give directions to students and then expect students to work independently. Maya said, “... I don’t think they [teachers] equip them [students] with the know-how to be independent.”

Feeling Cognitive Conflict

Statements in this category reflected cognitive tensions and uncertainty. Members sometimes described themselves “clueless,” “at odds,” “struggling,” or “real torn” about the idea(s). Other times, they described a feeling of discomfort or lack of understanding. For example, when talking about her learning during her final interview Maya said,

I thought some of my old ideas were complete and then I thought of some new things that I was learning, and I’m trying to absorb all of the information ... and

say, “Yeah, I agree.” But do I really? ... Is that what she’s really saying? Or do I have a better grasp of it? Everything she was giving us created tension.

Sometimes the members could describe a concept but would also describe their lack of understanding of that concept. For example, after talking about whether or not testing was fair to all students during the second focus group, Anna described how her viewpoint that testing can be harmful to children contrasts with her parents’ viewpoint that testing is necessary to reform education in order to make it more equitable, and concluded, “So I understand it, but I hate it ... I don’t know.”

Integrating Knowledge

Some statements made by members indicated a broadening and/or negotiation of a particular conception. I called this “integration” because it seemed as though the members were readjusting their initial conceptions to make room for new ones. For example, when talking about *culture* in the end-of-study interview, Maya (a Black woman) seemed to be making room in her conception of culture to include more variables beyond race. She said, “I got such a broad perspective [of culture] after class was over ... I still remember thinking that they’re alike, Black people are alike in general. And they’re not. And I’m starting to see that more.” Several other members talked about their knowledge about terms like assessment, culture, and literacy as having a wider definition because of their involvement in the course. In addition, sometimes the participants encountered more than one conception that they felt could be negotiated. For example, when talking about teachers’ need to address individual students’ interests and needs while still addressing the content-area objectives of the state curriculum, Joyce

said, “well, we have to teach *what* the TEKS say, but we can decide *how* we teach it.”

She seemed to try to negotiate competing conceptions.

To summarize, these categories were developed from all data sources. After analyzing members’ statements made in multiple settings, I created categories of statements in an effort to characterize the cognitive processes taking place during the construction of conceptions. Sometimes their ways of thinking were explicitly described by the teachers; other times I had to infer what processes were implicit in the teachers’ statements. Teachers in this group seemed to process conceptions by considering sources for knowledge, responding, feeling tension, and integrating.

Conceptual Mapping of Cognitive Processing and Conception Construction

I decided that I could best examine and represent the participants' construction of conceptions by using conceptual mapping (Britt, 1997; Northcutt, 2002). Conceptual maps can be used as supplements to a grounded theory (Glaser & Strauss, 1967) approach to research (Britt, 1997). As with grounded theory, the categories described in this chapter were gleaned from inductive and constant comparative analysis (Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998).

Conceptual mapping provides a means for representing how those categories relate and interact (Britt, 1997) by linking the categories in meaningful ways. The categories (Britt, 1997) that I created by analyzing members' statements inductively and deductively (Glaser & Strauss; 1967; Strauss & Corbin, 1990, 1998) explain the ways in which members seemed to construct conceptions as a series of cognitive processes. These are the same categories that I described within the first section of this chapter and in the conceptual map they are represented as units.

The links between units represent the interactions between the processing categories. I used the focus group conversations to examine the possible pathways that could take place from an initial conception to new conception, or the links between and among the units (categories of processing). I examined the other data sources, looking for other pathways and to see if the paths I had for focus groups also could describe the paths of individuals' conceptions. I asked the participants to tell me about their learning and describe their processes for thinking in our follow-up interviews, and I reviewed the

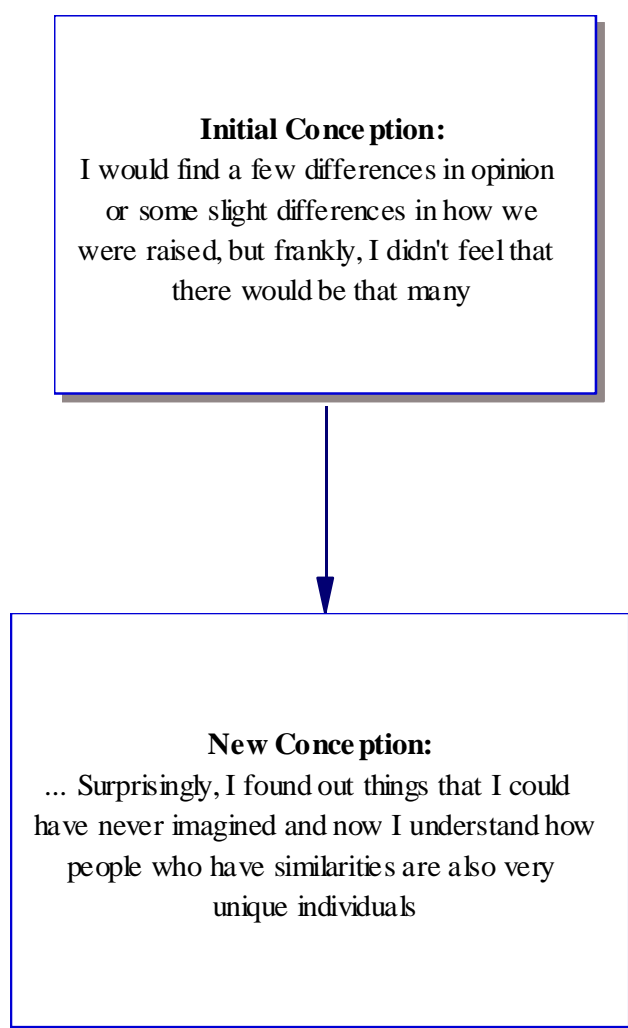
transcripts to see if and when members' explicitly described how they were thinking about topics during the semester. I also reread all of the class data sources (in-class discussion field notes and class assignments) to revise and verify my understandings of how cognitive processing might have occurred. After I analyzed the full data set, I examined specific statements or groups of statements made by individuals or within focus groups and class discussions and mapped them to see how they fit within the final version of my conceptual map. In the following section, I describe the ways members seemed to construct their conceptions by showing how I built the map piece by piece.

How Conception Construction Took Place

Theoretically, conceptions do not have to flow through processing—they could remain the same over time. In the data set, any time two or more statements were associated with the same topic, the construction of conceptions could be mapped. If represented as a conceptual map, these statements can be represented as two rectangular boxes labeled “initial conceptions” and “new conceptions,” with an arrow coming from initial to new. Alluding to Rumelhart's (1991) Connectionist theory of learning, these might be thought of as metaphorical “inputs” and “outputs” of cognition. In some cases, these were conceptions expressed statements in which members explicitly described their conceptual changes. They would say something like, “I used to think that..., [initial conception] but now I think... [new conception].” For example, Maya explained in her ABCs project write up that she began the project thinking about cultural differences as minor, but by the end of the course she thought of differences as important and countless:

I would find a few differences in opinion or some slight differences in how we were raised, but frankly, I didn't feel that there would be that many [initial conception] ...surprisingly, I found out things that I could have never imagined and now I understand how people who have similarities are also very unique individuals [new conception].

Figure 5.1. Maya's initial conception to new conception.

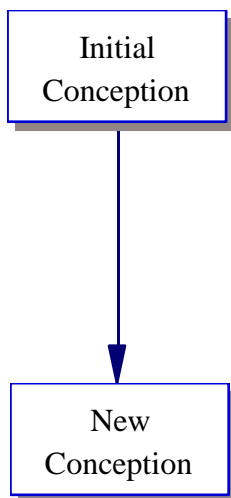


In other cases, initial and new conceptions are those that I identified within members' conversation as being integrally related to a topic and as having changed. For example,

Karen's conceptions about literacy changed. In her second online response, Karen wrote about literacy after reading an article about local literacies (Bausch, 2003): "It's important for teachers to know their [own] local literacies so they can understand and define their lives. After a person has gained information about themselves then they can help others [students] experience and know their own local literacies." In a related statement, given during her follow-up interview, Karen described literacy as "acquisition of language and using language. I had always thought of literacy as only being print, and now in really thinking about it ... literacy is everywhere."

In sum, individual conceptual changes could be represented with a generic conceptual map:

Figure 5.2. Generic conceptual map of initial to new conceptions.



The rectangular units labeled initial conceptions and new conceptions are representative of the topical content of statements, and the link between them illustrates progressive change from initial to new. However, this illustration begs the question: What happens to

spur a learner to move from initial to new? I created a map of the ways in which cognitive processing took place by placing initial conceptions at the top and new conceptions at the bottom of a space. Then I represented the categories (described within the first section of this chapter) as oval-shaped units and placed them in the space between initial and new conceptions.

Simple Example of Construction from Initial to New Conception

I created maps, one-by one, to represent the movement from one conception to another. For example, Joyce’s statements below each relate to the topic of inter-racial marriage (included in the larger topic of “Conceptions about Culture”). She made these statements in her ABCs project in which she compared her cultural autobiography to a biography she wrote about a woman from a bi-racial family.

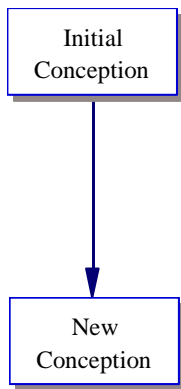
Table 5.1

Joyce’s Initial and New Conception

Statement	Conceptions about Culture:
I had been brought up to see this [inter-racial marriage] as a ‘no-no.’	Initial conception
I have come to the conclusion that cultural differences stem not only from the color of your skin, but more particularly from the unique family that each of us is born into.	New conception

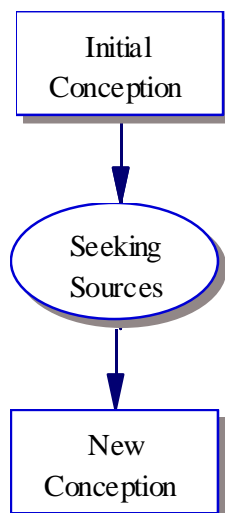
And can be shown with the generic map:

Figure 5.3. Generic Conceptual Map 2



However, I determined that Joyce had thought about these conceptions in several ways. Joyce wrote in her ABCs project, “I chose to interview Patti because she mentioned that her mother was Hispanic and her father was Anglo.” This statement is coded as “seeking sources,” thus the conceptual map for Joyce’s statements changed to account for her cognitive process:

Figure 5.4. Joyce’s simple conceptual map, part 1.



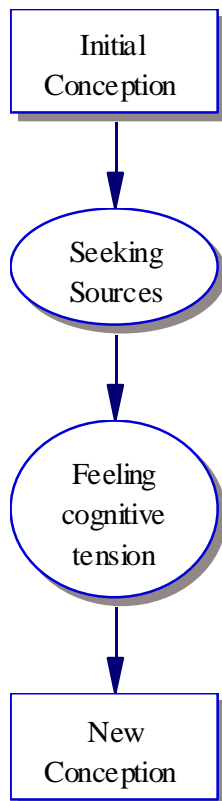
As more information was taken into consideration, Joyce's map became more complex.

For example, Joyce also mentioned in her ABCs project,

I never acquired enough courage to mention this fact [that I had thought of inter-racial marriage as a 'no-no'] to her at all. I had not yet examined my own feelings and attitudes about inter-racial relationships but unconsciously this made me feel very uncomfortable.

This statement is coded as "feeling cognitive tension," thus, Joyce's map grew as a fuller representation of her ways of constructing conceptions:

Figure 5.5. Joyce's simple conceptual map, part 2.



In this way, I built maps to represent individuals' ways of building conceptions as they moved from one conception to another through a cognitive process. Joyce's example provides a straightforward illustration of the mapped process. Few examples were so clear-cut. In transcripts from the focus groups, for example, the process from initial to new conception was taken up by different people. I used their socially shared cognition, as represented in focus group talk as well as in-class and on-line discussions, to infer how cognitive processing might take place. Again, these are the same data that informed the categories described in the beginning of this chapter, and those categories are represented as oval-shaped units in the conceptual maps. To create the maps, I reexamined the data to infer the pathways for conception construction.

Complex Models of Socially Shared Cognition

In addition to creating simple conceptual maps to reflect individual members' statements, I created maps to trace the movement of conversation within the focus group meetings, class discussions, and online conversations. These maps do not necessarily represent how one person might come to understand particular conceptions, but how conceptions might be built during an interaction among people. Therefore, in these maps, I have left off the rectangular units representing "initial" and "new" conceptions, and links are representative of temporal sequencing because I inferred that, given the pace of the conversation, that each statement was made in response to the previous. I show two examples.

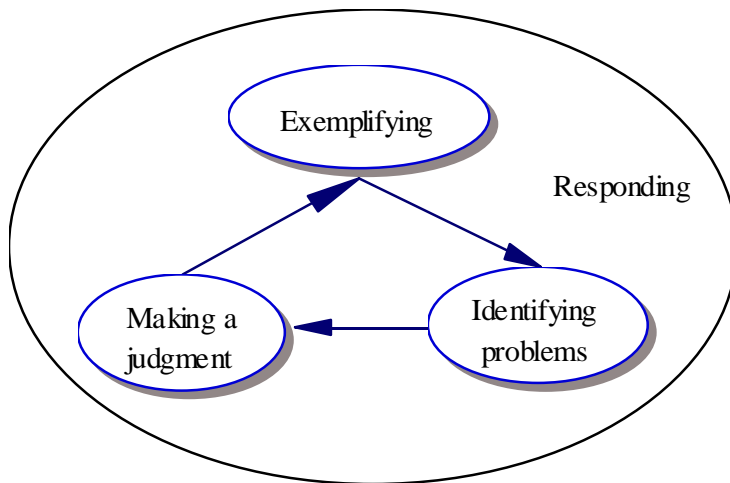
The first example comes from the third focus group meeting during which several of the members were suggesting that students who struggle with learning would be better

off if they received special education services. It was preceded by my statement, “I’m just wondering if there are different methods used in special education than in the regular education classes.” Jen responded by making a judgment, saying, “yes, because....” She went on to give an example of what happens in special education classrooms. Then she analyzed a problem—that it is difficult for teachers to meet the needs of students who need special education services within larger general education classes. Maya agreed with Jen’s problem statement and added another consideration for analysis. Maya’s agreement seemed to spur Jen to give another problem. Then Karen responded to their statements by giving her own example of trying to work in a crowded class, and Jen agreed. Sitting across from Karen, Jen, and Maya, Nena reacted by shaking her head vigorously. Nena then offered a new judgment about whether or not special education is different from regular education. Each of these statements were part of a larger whole: the conversation itself; thus, each statement was influenced by what preceded it and how the group reacted. For example, when Maya agreed with Jen, Jen felt comfortable going on to explain more. In fact, Nena later told me that she would not have spoken about her own judgment had I not called upon her because she felt that the group would not be receptive to her statement given what had already been said.

Table 5.2 *Complex Example of Socially Shared Cognition (responding)*

Beginning Transcript Line	Statement	Category
480	Jen: I say yes, because I did special ed for a long time. And then I was inclusion.... And then regular, then now I'm happy [she's an assistant in the library].	making a judgment
484	What, the thing that I notice is that you pull the kid away from the chaos basically when you're doing special ed. And you can bring them into an environment that's less students or one-on-one depending upon how many kids you're seeing at that time—whether it's content mastery or resource. And so you're focusing—so like in the classroom, there's so much more activity and so many more distractions and you're pulling them out of those distractions. And kind of slowing down the lesson for them. And modifying it however they need.	exemplifying
491	Because you cannot—I mean if a teacher has 3 or 4 special ed. kids, it is very hard to modify for every single child and give them every single thing they need. Maya: And still teach your lesson! Jen: And still work on the other 20 crazy kids in your class.	identifying a problem
	You know, so it gives them, it gives the child a chance to get into an environment where they can learn and actually think.	Making a judgment
500	Karen: If some of the other students are at their pace—I mean, I know I've been in a classroom before where I'm like 'you're ten steps ahead of me'. And I get so, like I just shut down. I stop listening. Jen: That's exactly my point.	exemplifying
506	Karen: And so they do that in their general education class.	identifying a problem
509	[Caitlin: Nena, you were shaking your head.]	
511	Nena: Oh. When you said is special ed. different from regular ed. I don't—I don't think so.	making a judgment

Figure 5.6. Complex example of socially shared cognition (responding).



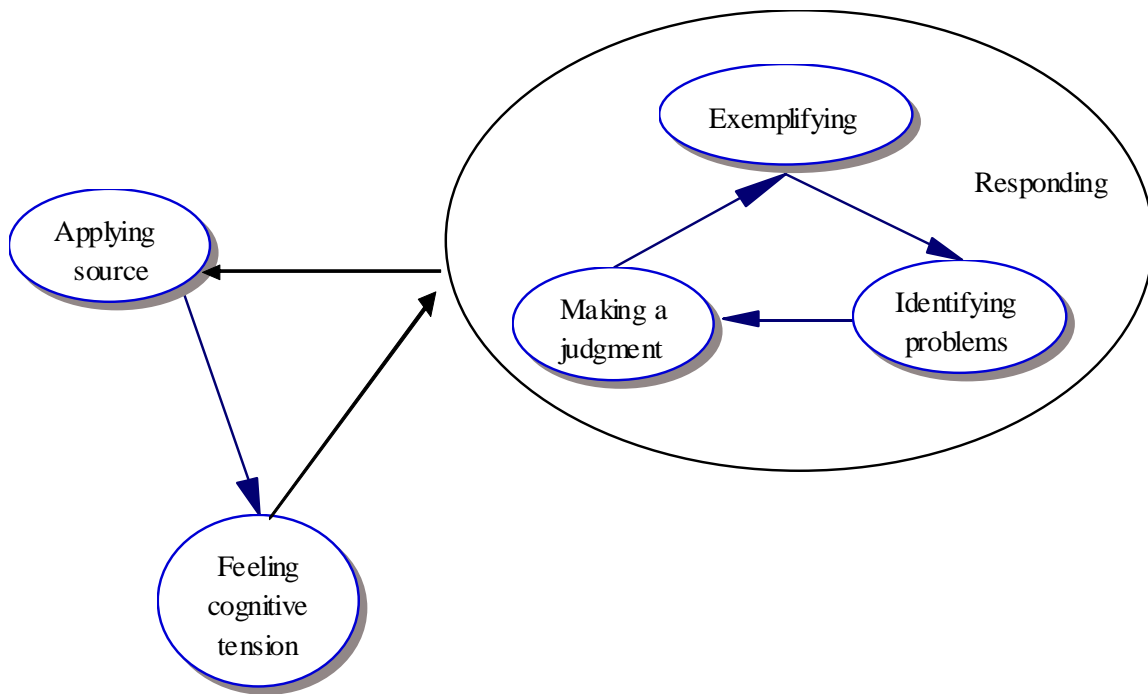
The second example comes from the second focus group meeting during a discussion about how the state-mandated standardized writing test might be created to be more culturally responsive to all learners. The group was discussing the prompts used in the state writing assessment, which they saw as problematic. In this topic unit, several members spoke, alternately building on each other's ideas. Karen offered a solution for how the test could be changed [exemplifying]. Jen reacted by recounting the "rules" of the test [applying source] and Maya agreed. Then Karen began a statement to identify how those rules differed from her own conceptions [feeling cognitive tension], but she was cut short by Jen who gave another report of what happens when students do not obey the test rules [exemplifying]. Maria tried to suggest another example of a solution [exemplifying]. But Jen suggested Maria's solution would still cause problems for

students [analyzing a problem]. Karen responded to the hypothetical situation by saying, “that stinks” [making a judgment] and Jen agreed.

Table 5.3 *Complex Example of Socially Shared Cognition (beyond responding)*

Beginning Transcript Line	Statement	Category
282	Karen: Right. So what I’m wondering if one way of teaching them is going in and saying when you see this test and it says ‘tell me about your best day’, you can start off your prompt by saying ‘my best day is when I don’t feel like this. My days are like this.’ Like how to teach them to go ‘okay, I don’t know what this means. So I’m going to change it around to something I do know.’... ‘I don’t know a best day’ and then write about why you don’t know.	exemplifying
292	Jen: But they do have to stay on the subject, isn’t that correct?	applying source
296	Maya: Well, they have to stay on subject	applying source
298	Karen: I don’t know if that’s to say--	feeling cognitive tension
300	Jen: if it’s changing the subject, then they’re knocked down [points are subtracted]	identifying a problem
302	Maria: Then they’ll teach them other words	exemplifying
304	Jen: They’ll get marked down for that.	identifying a problem
306	Karen: See, but that kind of stinks.	making a judgment
308	Jen: Yeah, it does.	making a judgment

Figure 5.7. Complex example of socially shared cognition (beyond responding).



Complex Models for Individuals

Conceptual mapping was also used to represent individuals' complex ways of constructing conceptions over short periods and during online, in-class, and focus group conversations. Below is an example used to represent Maya's cognitive processing during a discussion about testing. Maya seemed to move from thinking that explicit strategy instruction for reading is not useful when used with test-practice passages [initial conception] to thinking that strategy instruction is useful when the reading task is meaningful even when used with test-practice passages [new conception]. Maya had stated earlier that test-practice was responsible for creating isolated strategies instruction in disregard for learning [identifying a problem]. She seemed to argue that test-taking strategies instruction was meaningless for her child and gave an example by describing

what her son's teacher does [exemplifying]. Then she identified particular problems with her son's teacher's instruction [identifying problems]. Although she never said explicitly, "Strategies instruction is horrible," her tone and message made me infer that she was making that judgment. Each of these processing units occurred in a feedback loop within the larger feedback loop labeled "responding," and Maya had made these statements in response to her classmates' comments about testing. In this discussion, Jen suggested that some children need explicit instruction in reading strategies in order to prepare them to succeed on standardized tests for reading. Jen said,

Some kids need a map to follow. And so using those [reading] strategies [for test practice] gives them a map to follow. And so doing those strategies gives them a map to follow and helps them get better. But not all kids need that.

Later in the conversation, responding to Jen's opinions, Maya seemed to negotiate a way to include explicit reading strategies into instruction [integrating] and to argue that rather than teach just a few strategies with many test passages, perhaps a teacher should use one passage and show students how to use many different strategies to gain meaning about chickens. Maya's example is shown below.

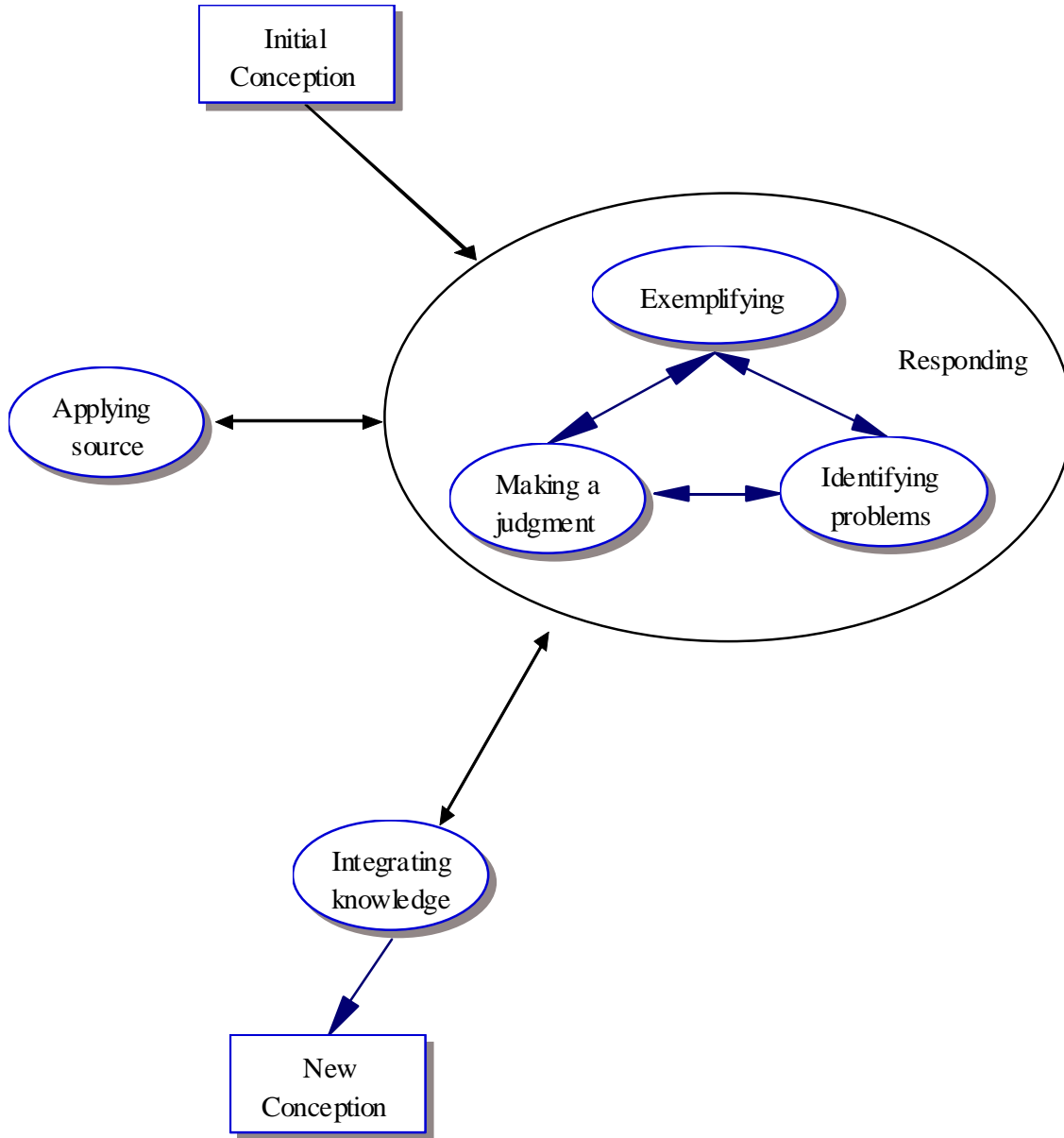
Table 5.4

Complex Example of One Person's Conception Construction Across a Short Period of Time

Beginning Transcript Line	Statement	Category
149	Maya: I think what testing does is it excludes children. It's basically a way to keep certain people out.	Responding: making a judgment
150	Just like what we read in that article.	Applying source
151	You're teaching—you're telling kids that if they don't speak this certain language and they don't perform to these certain standards then they're not smart. They're not intelligent. They're not capable of learning. And there are so many different ways to learn... They're saying, 'Oh, let's just teach them the strategies.'	Responding: identifying a problem
588	<i>Jen: I like the guidance of that structure...</i>	Responding: Making a judgment
598	Maya: But see, that's [teaching test-taking strategies] what she's [my son's teacher] doing. Every week. If he doesn't write the two sentences at the top, she takes off a point. If he doesn't write his summary at the bottom, that's a point. If he doesn't have every paragraph numbered, that's a point for each paragraph. So he sees all these -1, -2, -3. And I got to the point where I was trying to teach him—I'm not going to be your teacher. ... You kind of have to learn the strategy on your own.	Responding: exemplifying
604	Because she's requiring this of you [her students] every week. Because it was like a battle between us [my son and I]. It was—we would argue every single night.	responding: identifying a problem
652	I don't read everything she [Lauren] gives us. I just skim them. It's like 'Let me get the gist of this, write a couple of little summaries or whatever on what ever I'm reading.' And as long as I'm getting something from it, that's my main thing.	responding: exemplifying

1072	<p>...Why couldn't they just give them this one [practice test] and work on that all year. Look at <i>Lucy and the Chickens</i> [an invented test passage title]. Read <i>Lucy and the Chickens</i> for real. Talk about chick—you know what I'm saying, instead of giving, I mean, they would give them this kind of test 3 or 4 times a day instead of giving this one thing [test practice] all week. Or for two weeks or for three weeks. And letting them tear that apart. And look at it [the passage] in all different kinds of ways [using different strategies]. And use it in all different kinds of genres or language arts and social studies. Study chickens. You see what I'm saying?</p>	<p>responding: exemplifying</p>
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Figure 5.8. Complex example of one person's conception construction across a short period of time.



Data from individuals was also mapped to represent conception construction over the course of the semester and linked to related initial and new conceptions. In the following example, statements related to Karen's conceptions about culture were pooled

and analyzed. Her statements were categorized according to how she seemed to process conceptions. Then the links were created to represent the pathways for her cognitive processing.

Karen, a White, middle-class woman, wrote in her ABCs project report that she did not have a culture (“I did not learned about my culture in school,” “I wasn’t allowed to have a culture”) [initial conception]. She indicated in her ABCs report that she hoped this course would help her understand “what it means to be literate, have culture, and have culturally sensitive pedagogy” [seeking sources] (note, the ABCs report included an autobiography, a biography of someone “culturally different,” and a reflection on what was learned). In the first focus group meeting, in which we were discussing how discussions of literature might stem from students’ cultural backgrounds as they make connections to texts, she argued that students would benefit from learning about “culture” through instruction about cultures beyond their own [exemplifying]. Toward the middle of the semester, she identified the need to “relate to kids’ lives,” echoing ideas from the class related to culturally responsive instruction [applying source; Lauren had used the same term several times during the previous class meeting], and she identified a problem with standardized testing, suggesting that the tests do not “relate to kids’ lives.” Later in the semester, members of the course read an article about how culturally responsive instruction might alter the structure of schooling and literacy instruction, using an African American Church as an example of a different structure instruction (McMillon & McMillon, 2004). She responded online to a classmate’s comment about the efficacy of integrating a church-like structure for literacy instruction by arguing that it might

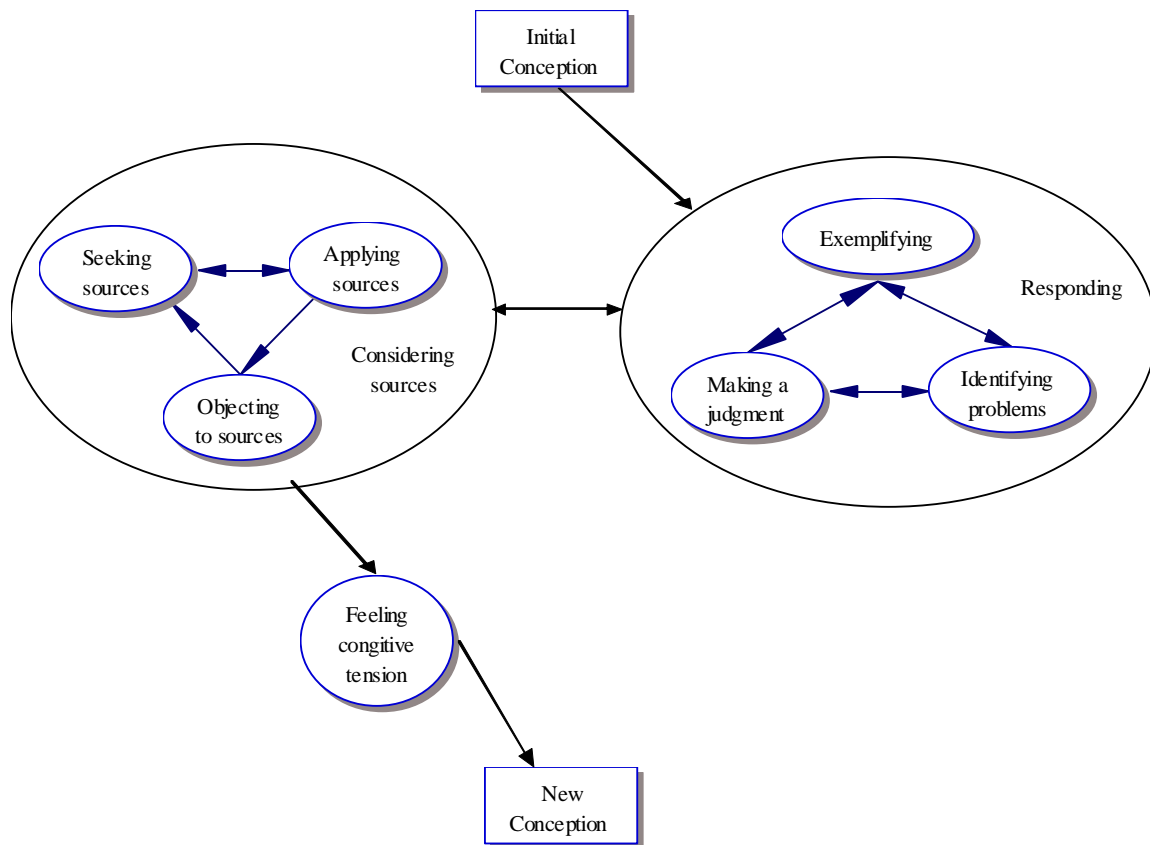
undermine “separation of Church and State” [objecting to source] but also agreed that “a church can teach skills and strategies for literacy.” She wrote, “it [the article] created so many questions and concerns” [feeling cognitive tension]. At the end of the semester, during her follow-up interview when I asked her about the McMillon article, she recalled having others’ cultural beliefs (e.g., religious beliefs) forced upon her at her school [exemplifying]. For her literature unit, Karen worked with Anna to create lessons meant to teach children about “homelessness and poverty.” When I asked her about her unit in our interview, she wondered aloud whether she should or could describe cultural influences of being homeless and poor “in a happy way” [feeling cognitive tension]. She concluded , “I realize now that I do have cultural biases” [new conception].

Table 5.5

Complex Example of One Person's Conception Construction Across the Semester

Data Source	Quotation or paraphrase	Category
ABCs project	"[While growing up] I did not learn about my culture nor did I gain cultural values through my community ... I do not think I was allowed to have a culture because I am a White, middle-class American girl from the suburbs.	initial conception
FG1	Karen described how culture could be a focus in instruction by providing multiple cultures for children to consider. She suggested that if teachers provide their students information about cultures other than their own, the students could find value in that information. She said, "you're giving them [students] a lot more information than they say, 'I'm not really interested in my own culture, but isn't <i>this</i> fascinating?'"	responding: exemplifying
FG2	Karen said that the language of the test has to "relate to [kids'] lives" (FG2).	considering sources: applying sources
FG2	Karen suggested that test makers neglect to use language that readily relates to individual children's cultural experiences, saying that prompts to write about "'your bedroom' [receive the response] 'I don't have one'. Or 'the ocean'—'I've never seen it'" (FG2).	responding: identifying a problem
Online response 4	Karen explained her perspective about an article (McMillon & McMillon) in which the authors describe the literacy practices within an African American Church. Karen wrote that the example was "interesting" and "I believe this is the environment they need to begin learning"; however, she also warned of the need to "separate Church and State."	considering sources: objecting to source
ABCs project	"[I hope] that I will leave this class with a better understanding of what it means to be literate, have culture, and have culturally sensitive pedagogy."	considering sources: seeking sources
Follow-up interview	"Growing up, I had a lot of things happen in my school where we would have Christian people in my school who were trying to ban books by the Christian organization of parents, and my mom was like, 'if you want to read them, read them.'"	exemplifying
Follow-up interview	When I asked about the McMillon article, she told me that the article had raised many questions in her mind, "It created so many questions and concerns."	feeling cognitive tension
final project and interview	Karen created a project to inform students about homelessness and poverty. She described how the project was difficult to put together because she worried that she was pushing her own biases on her students. She said it was particularly difficult to make the unit informative in a "happy way...without scaring them to death."	feeling cognitive tension
interview, line 227	"I realize now that I do have cultural biases that I do follow but that I have to be aware of that." She went on to describe how she, as the teacher, pulls from multiple cultural backgrounds and her need to be aware of her and her students' culture in her instruction.	new conception

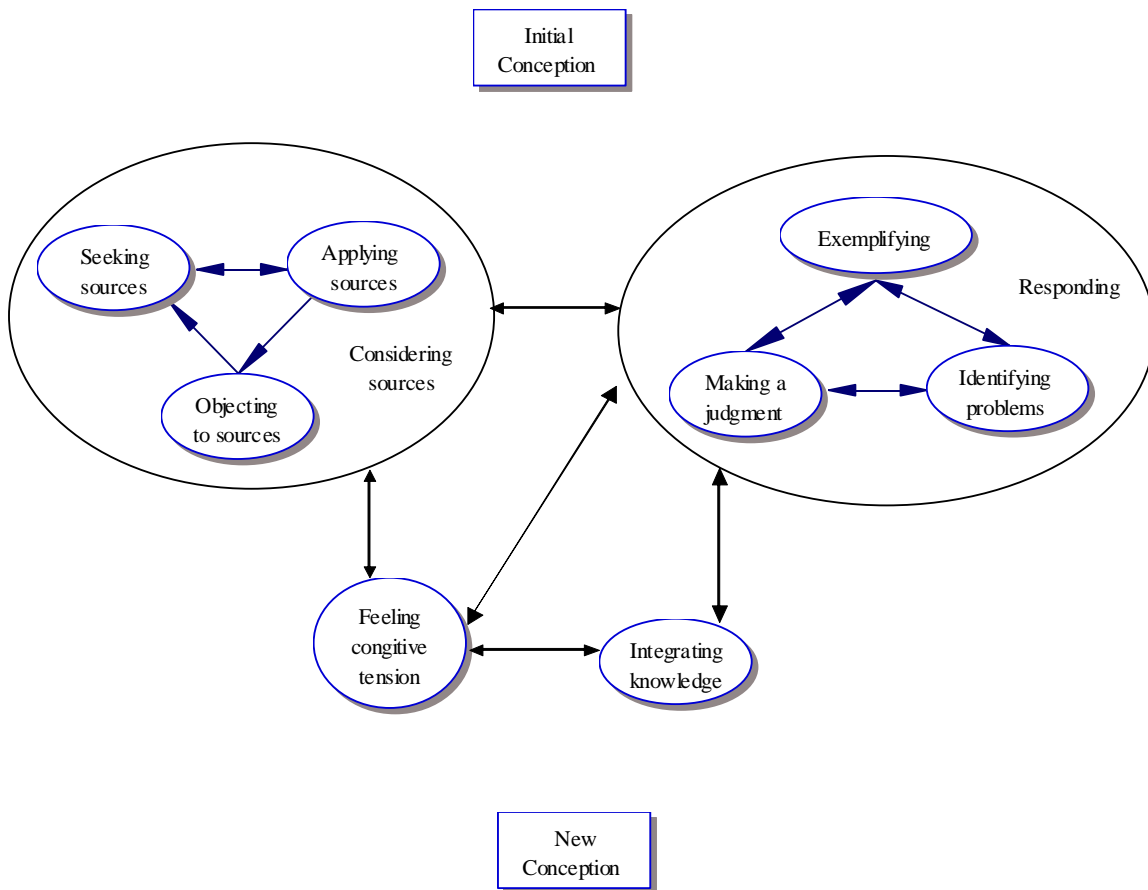
Figure 5.9. Complex example of one person's conception construction across the semester.



The Final Map

I created the final map (representing my analysis of how conceptions were constructed) after many of these smaller maps were combined to build a “cluttered map” (Britt, 1997; Northcutt, 2002) of all of the pathways I saw in the data. Then, through a process of reduction, the final map was produced by reducing any redundancy among the links and minimizing overlapping links. Redundant links were removed. Overlapping (or crossed) links were minimized by moving the units to a configuration that seemed to allow for the links to stand alone as much as possible.

Figure 5.10. Final conceptual map of conception construction.



There are several other aspects about the map worth mentioning that aid in interpreting how the map illustrates the processes which participants' used in shifting conceptions. They are: (a) how conceptions enter and exit the system, (b) how feedback looping illustrates recursiveness, and (c) the level of complexity of the pathways.

Conceptions enter the system at any unit; therefore, I have not included arrows extending from the initial conceptions to each of the other units because these arrows would have made the map very confusing. Instead, this aspect of the map must be understood as implicit. In some instances the pathway could proceed from initial conception, through one unit, to new conception. It is also possible for pathways to become more complex as more time and more statements related to a particular topic are taken into consideration, and the process can occur within more than one unit simultaneously (Rumelhart, 1991). Additionally, new conceptions can emerge from any unit(s). Also, new conceptions can produce initial conceptions. That is, after a conception has been constructed, it can become an initial conception in future cognitive processes.

Feedback loops are important aspects of conceptual maps because they help to tease apart reciprocally influential or recursive aspects of some processes and show how they relate to the larger process as a whole (Britt, 1997). Recursiveness is particularly evident in the "considering sources" and "responding" feedback loops. Conceptions that moved through the responding loop could have gone through a single processing unit (for example, making a judgment), but most often went through two or more. For example, responses could consist of exemplifying followed by making a judgment followed by

identifying a problem and then could return to exemplifying. Thus, there are almost unlimited possibilities for recursiveness in this system.

The level of complexity for each pathway model varied according to two conditions: the amount of time taken into consideration and the amount of data available. With more time and more data, a model grew more complex. Usually if more time was taken into consideration, then more data were available. However, sometimes I took longer amounts of time into consideration for a single participant but had very little data relating to a single topic. In these cases, the model would produce a simple pathway. And visa versa, sometimes I took a short amount of time into consideration but had much data relating to a topic, and in these situations the model would be complex.

This final map represents the multiple pathways by which members constructed conceptions. It will be used as a means for explaining two case studies that address the third research question in Chapter Six.

CHAPTER SIX

TWO CASE STUDIES

In order to understand more clearly how an individual constructed conceptions related to the course, I selected two members, Nena and Jen, as cases studies. In the cases, I briefly reintroduce their backgrounds, tell why they were selected as cases, and highlight particular aspects of their learning about course-related topics.

“The way you taught the course finally gave me a voice”:

Nena’s Case

Nena’s Background

Nena is a Pre-K classroom teacher. At the time of the study, she was completing her first year of teaching and was taking the class to fulfill certification requirements as well as to earn a master’s degree in elementary education. She planned to finish her certification requirements by the end of the following semester and to continue taking courses for her degree. In her fourth online response, Nena described growing up as a US-born, bilingual, Mexican American child. She wrote:

While I was growing up in El Paso, Texas, Spanish was spoken at my home. It wasn’t until I was in 3rd grade that I slowly stopped talking in Spanish at home and especially at school. My teacher forbade us to talk in Spanish and would hit our hands with a ruler when we did. My mother continued to talk to us in Spanish at home but I started to respond to her in English only. This continued until I was eighteen. Then I started going to a Spanish speaking church. The literacy experiences I gained were through weekly bible lessons, worship and praise, reading the bible, speaking and singing in front of the congregation, and having caring people around me. I speak and read Spanish fluently. I always did. But now I feel that speaking another language is part of who I am.

Nena’s experiences as a bilingual child who went to U.S. public schools and as a bilingual teacher teaching in the schools seemed to shape her learning, especially her transformative learning.

Why I Chose Nena

I chose Nena because she named her learning “a transformation process” and because she seemed visibly transformed during the course of the semester. During her follow-up interview when I asked what she had learned, she described her learning as a personal transformation: “I know throughout the whole course, there were just a lot of things that I experienced. And it was good because it was just like a transformation process for me” (interview). Transformation is thought of as freedom from traditional assumptions (Mezirow, 1991; Mezirow & Associates, 2000; Schmidt, 2001) and as a move toward personal empowerment (Freire, 1970; Greene, 1988; Mezirow, 1991). Transformative learning brings with it the ability (and agency) to more readily “take in” (or to be mindful of [Langer, 1997]) reality without the blinders of conventional beliefs or ideologies (Mezirow, 1991, 1998; Mezirow & Associates, 2000). To Nena, her own transformation meant that she no longer chose to “buy into ideas” and “catch attitudes” from “dominant” sources (e.g., teachers in her school, administrators).

Nena’s transformation visibly (and audibly) changed her; she began the class almost completely silent, speaking only three short times during the first focus group (a total of 5 lines of transcript), but by the third focus group meeting her talk took up scores of transcript lines. Nena grew up in a Spanish-speaking family but was denied the opportunity to use her home language in school. Although she learned to speak English, she explained that her experiences growing up had influenced her reluctance to speak. She explained this in her autobiography,

We spoke Spanish in my home and especially at my grandmother's house. I stopped speaking Spanish at school because they would not allow us to do so. Eventually, I stopped speaking Spanish all together. My friends found it very unusual that my mom would speak to me in Spanish and I would respond in English. I was a very shy kid growing up and I stuttered. ... I became very quiet and still remain quiet.

In the beginning of the semester, when she did speak, her neck burned with redness, her voice quivered, and her eyes misted. Most of her talk in the beginning was short, choppy statements. But by the end she became our loquacious story-teller, bringing stories from her own classroom so we could visualize her examples of culturally responsive literacy instruction that she drew from her own teaching. She emailed this message to the course professor at the end of the semester: "I have had a lot of feelings throughout my life that I could not put into words. The way you taught the course finally gave me a voice."

Nena's Conceptual Shifts

While analyzing Nena's conceptual shifts, I found three that seemed integrally related and informative to my inquiry about her transformative learning: conceptions about culture, language, and literacy. In this section, I review my findings relating to her conceptual shifts for each of these topics and describe the ways in which she constructed these conceptions.

Nena's initial conceptions underwent significant shifts during the semester. She seemed to move from valuing universal similarities to valuing cultural differences; from "aiming for Standard English" to widening her definition of language (e.g., Spanish,

English, receptive and expressive language, Standard and dialectic differences, etc.) and valuing multiple languages as means for communication; from defining literacy as print-related reading and writing to defining literacy as a means for communication and understanding across media and cultural groups. Below is a table comparing her initial and new conceptions related to culture, language, and literacy:

Table 6.1

Nena's Initial and New Conceptions About Culture, Language, and Literacy

Topic	Initial Conception	New Conception
Culture	“I bought into the idea before the class just from various experiences that we’re all alike, and when you look deep enough, we all share so much regardless of anything... I kind of bought into the world’s view of how multicultural education should be—when I thought of a culture class, I thought everybody has to validate everybody because we’re all the same.” (follow-up interview)	“We are different. Differences are what make us unique ... I would have never guessed that I viewed other’s through ‘my culture.’” (ABCs project analysis) “What is culture? I guess it’s just the experiences that a person has.” (follow-up interview)
Language	“It makes a lot of sense to aim for Standard English. I suppose as teachers we are modeling Standard English and the children learn to value our culture too.” (first online response; written in response to a classmate’s comment that teachers should urge children to use Standard English in schools rather than their home language [e.g., Black vernacular, slang, or code-switching between Spanish and English])	“Native language is a resource for learning....I strongly believe that ‘bilingual education reinforces close relationships among children and their family members.’ (Nieto, p. 226).” (online response 5; citation in original text) “I know the more vocabulary a person has, the more literate they are. I knew that. But now, I just feel like, just as long as there’s a means to communicate in some ways—and not just verbally either—that’s vocabulary ... and that’s language. (follow-up interview)
Literacy	“I just thought literacy was print and the stuff you see on the surface” (follow-up interview)	“Literacy is...so much deeper than that [print]. So I guess, to me, literacy is just an understanding. And it can come in so many different ways, not just print.” (follow-up interview)

Nena's Ways of Constructing Conceptions

Reviewing Nena's conceptual shifts leads to asking the question, what did she do to shift from one conception to the other? She considered sources offered in the class and applied them in class discussions; sought sources by asking classmates what they thought or by looking within the readings for information; objected to sources for knowledge (especially sources from within her school); responded by exemplifying, making judgments, and identifying problems; felt cognitive tension; and integrated knowledge by negotiating and broadening her conceptions—in short, she did it all. Interestingly, however, Nena was one of the students in the class with a minimum number of statements, yet her statements seemed to occupy each category of processing in the conceptual model.

Multiple cognitive processes at once. Many of Nena's statements were offered in the online responses, and often these responses evidenced her multiple ways of constructing conceptions. For example, in the first online response she wrote about Powell's (1989/1998) article titled, "Johnny can't talk either: The perpetuation of the deficit theory in classrooms," and her short message could be coded as having *five* ways of processing (this was very unusual for others in the class). Nena summarized the article and responded by making the judgment that the article was correct in its assertions, identifying a problem in those assertions, giving an example of how the problem could be solved, and then wondering where she could find information about how she might change her own instructional methods to adhere to this new belief. She wrote:

I made a lot of connections when I read this article ... Basically educators tend to view children's language from a deficit perspective. In reality, children have a lot of prior knowledge [applying sources]. The way they express themselves is not so important as compared to that they just express themselves [responding: making a judgment]. As a teacher this is difficult because you want to maintain order and not allow unnecessary disruptions. [responding: identifying problem] Yet there is a way to allow children to communicate and still teach the lesson as planned. The way I am talking about is weaving time in the lesson for children to "weave their own text." [responding: exemplifying] ... I guess I just need some information on how to guide a discussion [seeking sources].

Borrowing language: From applying to integrating. There is evidence, from her use of quotations and citations as she explained her new conceptions, that she borrowed language from the course readings and integrated concepts from those readings within her conceptions. In the following examples, Nena summarized or reported on a source and later alluded to that source either explicitly (by quoting or citing) or implicitly (by alluding) as the semester wore on. In an example taken from the third round of online responses to readings about learning from students and understanding how families and schools can communicate (e.g., Bausch, 2003; Moll, 1992; Nieto, 2003), Nena wrote in her summary of that week's readings:

Nieto also says that we need to "affirm differences rather than deny them." This means that "people behave in different ways and believe different things." It is also important to note that within a society there is a 'culturally dominant' group.

According to Nieto, everyone has a culture and each “culture counts.” [quotations in the original text]

More than two months after she posted this response to the readings, she told me in her follow-up interview, “Those [cultural] differences are important and need to be highlighted to make everybody individuals and then we can come together and work together because of those differences.” In another example of how she applied sources for knowledge and eventually integrated that knowledge, also taken from the third online response, Nena responded to a classmate by referring to a chapter that she had read (Freire, 1970), assigned more than two weeks prior. Maya had written her opinion that teachers easily become “dictators” by “demand[ing] they [students] take a test or turn in an assignment,” and, in turn, lose touch with their students. Nena responded:

Hi Maya:

I appreciate your thought-provoking reflection. You’re right, we, as teachers, fall into oppression when we accept what is mandated to us. As Freire states, we must transform our thoughts into action (communication) which results in “authentic thinking” and “humanization.” [quotations and parentheses in original]

Nena also referenced Freire’s work in her fourth online response when she wrote about an article describing the usefulness of a church-like structure for literacy practice and development among children (McMillon & McMillon, 2004). She wrote that the church described in the article showed how a caring environment could cultivate literacy development in the Freirian sense by granting the power to communicate, concluding “Caring for other people transforms (Freire) lives” (citation in original text). During our

follow-up interview when she mentioned to me that she had felt transformed by the course, I said, “You used the word transformation in a couple of your answers. What does that mean?” She gave her own definition, one that distinctly alluded to Freire’s, saying, “Transformation is like freedom, not being oppressed.” These were just two examples of how Nena seemed to apply and integrate sources for knowledge, and they illustrate how she moved from echoing language used within course-related sources and appropriating it as part of her own everyday language.

Objecting to sources. Nena also objected to sources for knowledge during the semester; however, those sources were school-based sources, such as teachers and administrators at her school. For example, during the sixth class meeting she told us that she was no longer going to listen to the teachers at her school who had advised her to insist that her students raise their hands during full-group discussions. Nena told us that by letting the children call out, she hoped that she was allowing more students to be involved with her discussions of literature. Nena said, “nobody told me I can do it my way ... but now I let my kids call out what they want to say.” She gave another example of her objection to school-based sources in her interview, telling me about teachers in her school who insist that bilingual education is not necessary. She said,

the educators [at my school] that I’m involved with and talk to ... they kind of don’t like to accept us [Spanish speakers] ... I don’t say anything, but inside I’m feeling like yeah, but come on! There’s an abundance of [Spanish speakers] here.

Feeling many cognitive tensions. Nena also seemed to feel cognitive tensions throughout the semester. For example, Nena told about a moment when she felt

uncomfortable as she realized that her initial conceptions about culture could not be negotiated with her new conceptions. She told me,

I was shocked to learn that the similarities, yeah, they're there, but that's not as big as the differences. And it's those differences that are important and that need to be highlighted to make everybody individuals and then we can come together and work together because of those differences. And that was a shocker for me. Because I didn't buy into that. ... It was safe to be alike and just look over the differences and appreciate that. And coming in, I was just kind of covering it with 'we're all alike.' And with everything going on, the readings and the discussion, it was just emerging through. But no, I wanted to be safe. I wanted to go back to the point where we were all alike and make that argument. But I just couldn't. I sat there at one point in class and it just all fell apart. Just like 'uh-oh,' you know? It's like it fell through.

She also described feeling cognitive tension when she told me about her changing conceptions about language and literacy instruction. Nena said that this tension occurred after she heard the guest speaker talk about her experiences in a bilingual education program that offered a second-rate education, low expectations, and did not allow the students opportunities to grow their biliteracy skills. This is how Nena explained her cognitive tension in the follow-up interview:

It [hearing the guest speaker talk about bilingual education] was discomfoting because I looked at myself, I was always looking at, 'oh you can look at others,' you know? And with this one, I had to look at myself and the way I think, and I

was very [discomfitted]. I guess as I read more toward the end where it was more about bilingual education that it hit me more because that's specifically my background. ... I felt tension because it was more about bilingual education that it hit me more because that's specifically my background. ... I felt like I was letting go of something that was part of me. [Nena's eyes welled up with tears.] And so it's like this year—being a bilingual teacher—I just thinking, why am I doing this? Just because I have Spanish in my background? So what. Why is that so important to me?

In these moments of cognitive tension Nena questioned her own assumptions about herself and her role as a teacher. She reflected on listening to the guest speaker describe the meagerness of her own childhood bilingual education experience as Nena and I sat in the cafe where we were doing our interview. She told me, with tears in her eyes, that she had had a similar experience in bilingual education and had always blamed herself and thought she was just dumb. She said:

I finally realized that a lot of things—when I was a child—a lot of things were told to me that I was supposed to assimilate. And basically I did. And I was in this [bilingual elementary] class with no materials or anything. And I finally felt—because I used to feel like I was dumb—and I finally felt that I'm not dumb. [She started to cry.]

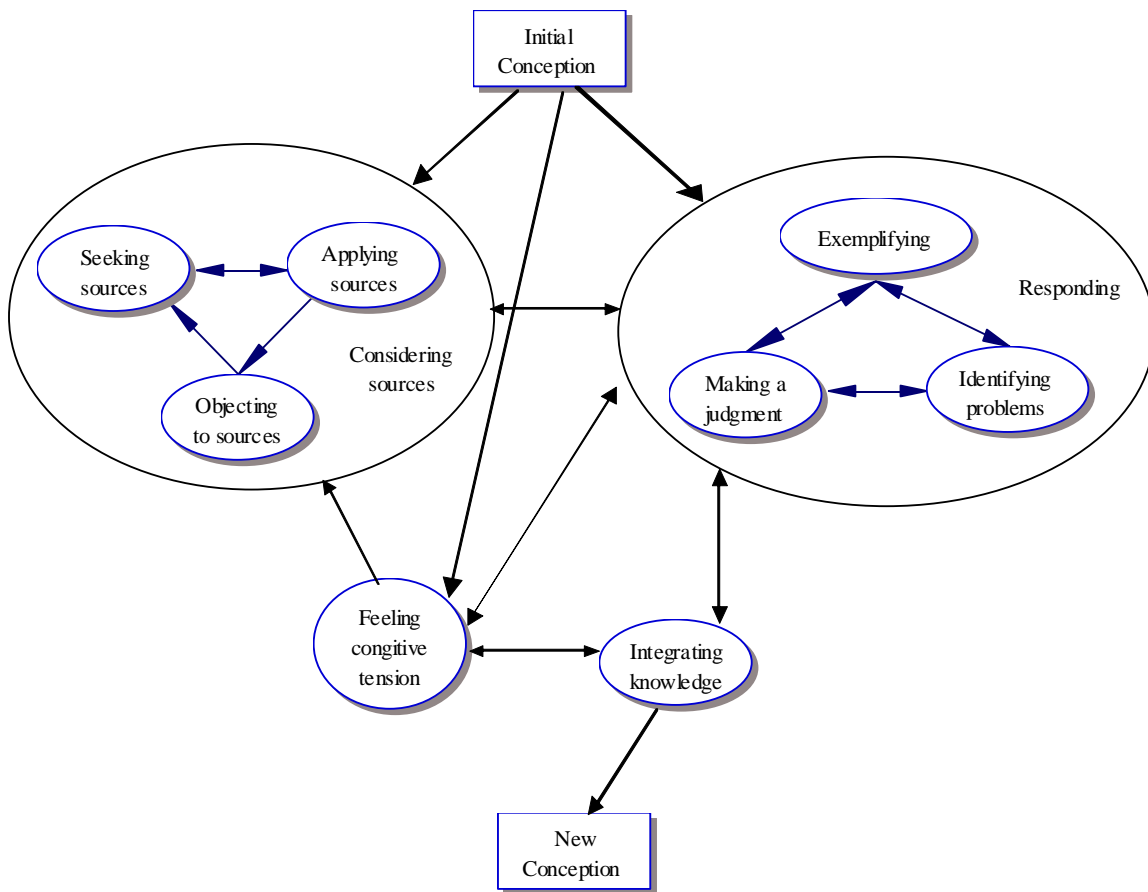
After the tape recorder clicked off, Nena told me that the course had caused her to rethink her role as a bilingual teacher. She explained that she no longer felt comfortable at her school because she was being denied supplies and support because she was a bilingual

teacher rather than a general education teacher. She had asked her principal to transfer her to a new school in the district.

Summary of Nena's Learning

I created a series of conceptual models to represent the ways in which Nena constructed her conceptions related to these three topics. If those models were placed one on top of the other, this is how they might look:

Figure 6.1. Nena's aggregated model.



As shown in Nena's conceptual map, conceptions were recursively processed through each mode for understanding as Nena constructed them. She seemed to embrace sources for knowledge offered within the course as meaningful and worthy of consideration. She

also responded to those sources by identifying within her own experiences examples of effective teaching and problems within schooling. She seemed to use her experiences as a bilingual student and teacher to judge the truthfulness and efficacy of ideas being offered within the course. Nena often felt cognitive tension between the concepts she came with and those offered within the course, and many of these tensions fed her re-construction of conceptions—her inquiries, her attentiveness to sources, and her need to re-judge her own conceptions. Nena also integrated knowledge by appropriating language used within the course and applying it to her own situation, and, perhaps as a result, objected to sources for knowledge offered from school-based sources. Nena considered the course to have been a transformative learning experience. And while transformative learning is a development that becomes clear only in retrospect, we can trace Nena's transformative learning process from the beginning of the semester onward and characterize it as a series of conceptual shifts.

Epilogue

It would be nice to say that Nena emerged from the class feeling, renewed, confident, and inspired to teach due to her transformation—which is true to some degree, but I can not make that claim without caveats. In our follow-up interview, Nena expressed anger with her teaching colleagues and frustration with her teaching situation. For example, she told me,

I remember at the school I'm at, the other bilingual teacher that works there, she was telling her students don't say anything when they're [regular education teachers are] mistreating you. Don't say anything. And I didn't tell her anything at

that point. It was earlier in the spring. But now, if she would have made the same statement I would say no, gosh, that's the worse thing you can say to a child—don't say anything. That makes them so powerless!

She also told me that on the last day of school she was asked by a special education teacher to attend and translate an Admission, Review, and Dismissal (ARD) meeting for a special education student that was not Nena's own. She felt that the request was disrespectful of her position as a teacher and refused to do it. She told me, "I had planned a bunch of activities for my kids because I knew I'd be real emotional, so I wanted to keep busy. And they were trying to pull me away from my kids." When a teaching assistant came to relieve Nena from teaching so she could go to the meeting (after she had already told the special education teacher she preferred not to go), Nena told the assistant to go away and that she wasn't going to leave her kids on the last day of school. The principal came down to "talk" to her, and, after a while, the principal hesitantly agreed to let Nena stay in her classroom. Nena said she would not have been able to stand up for herself before this class. I offer these as examples of what happens after a transformative experience. The irony here is that Nena came to the course and embraced course-related ideas; however, by the end of the course, she felt compelled to resist her school administrators and faculty and asked for a transfer out of the school that summer. That transfer was denied.

She has earned her teaching certification and is teaching PreK at the same school. She recently wrote to me,

Back in May I had requested a transfer but it didn't happen. I am optimistic and plan to focus on the positive and renew my mind by seeking people such as yourself and Lauren who are encouraging and bring out the good in people.

“I think I had a pretty good grasp of multicultural life
before I took the class”

Jen’s Case

Jen’s Background

At the time of the course, Jen was finishing her first year as an elementary school library technician and had nine years of experience working in elementary schools as a teacher’s assistant in special education, from inclusion to residential settings. She was also a “literacy tutor” for students who were nominated by their teachers to receive special test preparation so that they would be able to pass the state-mandated reading test. Jen took the course as part of her teacher certification requirements and planned to finish those requirements within the next year. The school where Jen works serves bilingual and English language learners and pools students from throughout its small district as well as from neighboring communities. Jen described her students during the follow-up interview, saying, “The students I work with in my [special education and literacy tutoring] classes are definitely multicultural ...when I was doing special ed the majority of our students were African American, Hispanic, and Asian. And there were very few White children.”

Jen was interested in understanding more about bi-racial families and what she called “blending cultures,” perhaps because she has experienced and is experiencing this within her own life. When she was in her 20s, Jen’s parents, both White, got divorced and her mother married a Hispanic man. Jen reported on this in her third online response in

which she addressed Peggy McIntosh's (1988) article on White privilege (in which McIntosh lists 26 unearned privileges of being White in U.S. society). Jen wrote:

I remembered that I personally experienced #15 ["15. I am never asked to speak for all the people of my racial group" (McIntosh, 1988, n.p., retrieved on Oct. 16, 2004, from <http://www.utoronto.ca/acc/events/peggy1.htm>)] when my mom remarried and my step-siblings constantly made the differentiation between "we Mexicans" and "you white people." They don't do it so much anymore, but it really put a barrier and it seemed like they questioned society as a whole and expected me to answer for it.

Jen also mentioned that her mother and step-father are a bi-racial couple in her interview, something I took to be indicative of her interest in understanding more about her own situation. In response to my question about culture ("What is culture?"), she told me:

You also have the blending of cultures, like my mom is White, my step-dad is Hispanic. But yet, he's a bilingual pastor and she goes to his church every Sunday and listens to his delivery in Spanish. She has learned to communicate with people who they've met who really didn't know English. But she can communicate with them. And so there's a blending there of cultures.

Jen lives with her sister and brother-in-law who have adopted a biracial son. She told me during her follow-up interview:

The baby is Hispanic and African American. And she [my sister] wants to incorporate those two cultures in how she raises him because it's kind of obvious that he's not White like us. So she wants him to learn that yes, you were raised by

two parents who are White, but his birth mom and his birth dad—which he’s going to be taught about all his life—come from this culture. ... There’s a blending of culture that we don’t know that much about and we would like to be able to do that. ... I wish we knew more about that issue: the blending.

Why I Chose Jen

I chose Jen because she always came to class, completed all of her assignments satisfactorily, and said that she read all assigned readings throughout the semester; however, when I asked what she had learned in the class, she told me, “I think I had a pretty good grasp of multicultural life before I took the class.” When I asked if she had changed her mind about anything due to her participation in the course, she said, “not really, I don’t think so.”

The only ideas offered in the course that she identified as meaningful were strategic or technical aspects of literacy instruction modeled by the course instructor. During the follow-up interview she told me:

when I take a class, I want to be able to take some things to a classroom like the next day and try it out ... I tend to think that everything should be functional. I should be able to take everything I learned and use it. And if I can’t use it, then I just see it as a waste of time.

These goals were almost directly opposite to the professor’s goals for the course: “I was really working on their belief system. I wasn’t as much concerned with the strategies. ... I thought it was more important to change their perspectives about kids and those strategies will come later.”

Jen's Conceptions

Jen told me that many of her conceptions had remained constant throughout the course. For the sake of comparison, I describe Jen's conceptions about culture, language, and literacy, the same topics described within Nena's case. When I asked during the follow-up interview if her conceptions about literacy or culture had changed during the semester, she said,

Not the literacy one because I had had Lauren the semester before for a reading class. And we discussed literacy a lot. And I think that she does a very good job educating people on what literacy means because I knew that literacy went beyond reading but not to what extent. And so in that class, I can't remember which one it was, we did a lot more exploring on 'okay, what is literacy? and what does literacy mean to a child who's two? Or who's four? And to a child who's six? Because it's going to be different. And also for an adult who lives in this neighborhood compared to an adult who lives in this neighborhood. And so we did a lot of in-depth discussion about what is literacy. So I don't think that changed at all. And culture—I don't think my opinions about culture changed. The same was true for her conceptions about language. She wrote her first online response about two articles that focused on how educators label students as having deficits when they "differ from the mainstream" (Flores, Cousin, & Díaz, 1991/1998, p. 27; Powell, 1989/1998):

I like this particular topic on both articles since they are very relevant to my school setting right now. My school is very bilingual and language is a problem.

My Spanish isn't the best, so when I am having difficulty communicating in my broken Spanish I often begin questioning teachers about the students and their language abilities in Spanish and English. When you are in an educational setting where you are trying to promote the sharing and interdependence of cultures, you have to teach and develop respect for one another's language. So, in this sense, I agree with Powell that we need to value each other's culture. But coming from a low-income school, you can clearly see students who are very lacking in verbal skills.

Jen seemed to have a similar take on the topic of language by the end of the semester. When I asked her to tell me what she thought of language during her interview, she said,

I think language can be a barrier ... Coming from a school that is almost ½ bilingual, there's a lot of—you see kids in the hall who don't talk to certain other kids because they only speak Spanish.

She also told me that a bilingual student of hers, whom she had talked about with the group in the third focus group meeting, has

... no English base or Spanish base. There's just this hodgepodge. My guess is if she's grown up in that environment [i.e., with a mother whom the teachers in Jen's school suspect has "no language" as well], then no wonder she doesn't have the skills that other third graders have.

Reflecting the thoughts of other teachers in her school, Jen still seemed to view language as a problem and students as lacking abilities due to differences between home and school languages.

Jen's Ways of Constructing Conceptions

Like Nena, Jen constructed conceptions in multiple ways. She related to, sought, and objected to sources for information; she responded by exemplifying, making judgments, and identifying problems. However, there was little evidence that she integrated knowledge offered from course-related sources as part of her own knowledge, and she rarely experienced feeling cognitive tensions, at least not explicitly.

Considering sources for knowledge, especially school-based sources. Much of her consideration of sources involved relating to sources for knowledge and those sources often sprouted from her own experiences as a professional working in schools (e.g., teaching assistant, literacy tutor, and library technician) or other school-based sources (e.g., teachers at her school, classmates in the course who currently teach). For example, during the first focus group meeting the members were talking about ways of assessing literacy, and Jen reported what teachers in her school do as a way of informing other members in the group. She said,

What I see in our school is they start early on going through levels. As soon as they get into Kindergarten, they're given the CAP test. They are given—the district made up their own Kindergarten assessment and they're given that at the beginning of the year. And then, once they get into first grade they're given one other test. The teachers are encouraged to do different assessments on the students.

She also sought sources, but again, these were school-related sources. In one example, taken from the third focus group meeting, Jen asked the two bilingual school teachers for

their input and did not (explicitly) refer to any of the course readings about how a teacher might teach a bilingual student (e.g., McGillivray, Rueda, & Martinez, 2004; Nieto, 2003; Williams, 2001). Jen had told the group about her experiences and frustrations tutoring a third grade bilingual student and then said, “I was going to ask one of you two [pointing to Nena and Maria] earlier tonight just to get a bilingual feedback because you all have bilingual classrooms.” Her objections to sources also indicated that she valued school-based sources over course-based sources. For example, she wrote her first online response to Powell’s (1989/1998) article about the ways in which teachers create deficit myths about children’s abilities to learn because of linguistic differences. Jen responded,

I do not agree with Powell’s idea of self-fulfilling prophecy, but instead I recognize that teachers know what will happen to their students. It could be that I have been fortunate enough to work with very talented teachers, but from what I have witnessed and seen, experienced teachers are able to quickly recognize what a student’s deepest language struggles are. I guess I give my colleagues more credit than Powell does. ... I wish she had more concrete evidence or facts.

In her second online response, Jen wrote objections to Nieto’s (2003) chapters on testing and tracking and related to her own school as a source for knowledge on the subject:

When I read Nieto, I feel like I am just reading one big editorial. I wish she would give more recent facts and studies to support her opinions. ... Tracking is a common practice in my school, but we see it as more of a success than a problem. Scheduling conflicts do occur, but 99% of the teachers at my school work around this. Most teachers believe that they want what is best for our students and that

special programs or groups will help their students. I would like to see recent research on tracking instead of facts from 1985.

Responding with school-based sources in mind. In addition to relying heavily on school-related sources as a source for knowledge, Jen also responded by drawing out examples from her own school and making judgments about whether or not the course-topics aligned with what she was seeing in her own school. For example, during the third focus group, Jen responded to a discussion in which the other group members were talking about the need to individualize instruction by sometimes slowing down the pace even though it might mean that a student is not prepared for the state-mandated test or to graduate to the next grade level as well as the need to help students pass the test and move on to the next level. Jen judged their points and then applied it to her own teaching situation. She suggested that at the upper elementary levels students need to be prepared to move on to junior high and teachers do this by supporting development of students' independence. She said,

However teachers prepare them [students], your goal is still to make them, or help them, become independent. And they're not when they're little. But by the time they get out of elementary, they should be ready for junior high and the independence that comes with that.

Jen's response moved from "making a judgment" (above) to "exemplifying" (below). She went on to describe her own teaching situation as an example of how to create independence:

Even the way we prepare kids—our kids—it's our job to teach them how to use the library. And all the skills that come with that. And by the time they're in middle school, they have to do it independently. They don't come with a class. There's usually no one there to help them. I mean, if they ask they might get someone there to help them find a book, do research, or whatever. But basically, they're on their own in middle school. And we tell them, and we tell them, and we tell them. And then we'll run into kids later and they'll go, 'Oh yeah, you were right.' Because they didn't believe us that that librarian is a dragon, and she's going to breathe fire on you [laughs]. And so they say, 'Yeah, she's a dragon.' But we taught them that [how to be independent]—you have to, you know. And we do give them kind of the scary aspect of 'You have to know this when you're in middle school.' But we try to turn it around so we're, 'You have to know this so we're going to teach you so you can be impressive. And you can already know how to do this before you get there.'

Jen also identified problems; however, these problems were more often related to information presented in the course-related sources rather than problems in her own school or in schools in general. For instance, in her fourth online response to three articles (McMillon & McMillon, 2004; Strickland, 1994/1998; Twiss, 1997/1998) about cultural literacy practices and culturally responsive instruction, Jen judged the ideas and culturally responsive instructional strategies to be worthy of consideration, but suggested a problem in that they did not include ideas about how to involve the community. She

wrote, “Does anyone have any idea on how to let the community around us know that they have a job as well in this [culturally responsive education]?”

Evidence of integrating? There were a few statements that gave evidence of Jen’s integration of course-related ideas, and I was left to wonder, after our follow-up interview, if Jen had ever appropriated these ideas or if they were just momentary examples of dialogic echoes that never lasted beyond the course itself. In one example, I compare two statements Jen made in the second month and last month of the course about whether or not teachers should take on a class mid-year. Jen told the group in the second focus group meeting, “I think you’re never supposed to take a job in the middle of the school year because you’re always going to get the bottom of the barrel [i.e., students who have failed state tests].” In the tenth class meeting, she still maintained that teachers should not begin mid-year, but her reasoning seemed to change. She said, “You [teachers] may have a terrible classroom, so spending one-on-one time is just not going to happen.” “One-on-one time” was something discussed in the class and advocated by the professor and several members of the class, and Jen used the lack of one-on-one time as a way to rationalize why a teacher should not take a new class mid-year. However, she still did not acknowledge one-on-one time as a viable alternative in the reality of her school experiences.

In another example, Jen seemed to use the language offered in sources provided within the course, but in a sense she contradicted sources of that language because, in the same statement, she also used the language of her school. These two sources seemed to offer contradictory concepts. For example, much of the talk in the class was about

understanding a child's literacy abilities through a compilation of analyses, including cultural background, student's interests, one-on-one involvement with the child, et cetera; in contrast, in the first focus group meeting and throughout the semester, Jen described how teachers in her school based their understanding of children's literacy abilities as *levels* (identified by formal assessments such as the state-mandated assessment, Accelerated Reader quizzes, and district-made tests). An example of how Jen attempted to integrate these two discourses is taken from the fourth focus group meeting during which the group had access to multiple assessments from one fifth grade student, including a reading interest survey and a stack of books that the student had selected as being interesting. The group was discussing how to assess a student's literacy abilities using various assessments and evaluations. Jen cited the student's interest as an important factor to her analysis of the child's literacy but ultimately seemed to ignore those as she described the child's reading of "low level" books. Jen told us:

There are also a good number of teachers who really want to see her succeed [vs. teachers who only spit out information for students to learn]. And they're going to try everything that they can think of to get her to succeed. Regardless of the TAKS test, regardless of what's here [e.g., standardized benchmark test results], let's find an interest, let's work on getting her built up and more confident. And it kind of disturbs me that she's reading such low level books you know, as far as the Cam Jansens [a series of children's books by David Adler, usually considered an "easy chapter book" for upper elementary level].

During our follow-up interview I asked Jen to describe for me how she might assess a student's literacy abilities, and she seemed to rely again on a school-based perspective. She told me that teachers should have more say in how to assess children and should be able to use any of the tools they have available to them flexibly to pinpoint a child's strengths and struggles:

In a perfect system, there would be a way to really go more on teacher judgment because teachers are who are with the kids every single day. And I don't know if that could somehow be incorporated into assessment of kids other than just, "let's give them a standardized test and see what level they're on." Because the test doesn't know the child. And some kids freak out at tests. Some kids are having a lousy day. There needs to be some way to put into assessment—you know, teachers get a full school year perspective. And that needs to be accounted for other than 'let's just do this test.' Because even if you do periodic assessment, like we do the STAR [Standardized Testing And Reporting] reading test that goes along with Accelerated Reader, and some kids—I mean it doesn't matter how many times you do that test—you can hit them on a bad day every single day and it's not going to give you an accurate reflection of their reading level. Whereas, the teacher knows 'okay, it says a reading level of 3.5, but I know they can read closer to a 5.' And so I think that that should be accounted for. I know some of my friends who are teachers that have been teaching for a long time, even though most teachers don't like basals, they tend to go back to the basals and explore questions because they think that's a more accurate reflection. For example, one

of my friends who teaches second grade had a child. She was doing guided reading the first six weeks of school and according to guided reading, he was doing fine in comprehension. She put him in a basal and he couldn't do any of the comprehension in that. And so she tried different basals. You know, 'Let's work with this.' She totally missed it in the guided reading test, but here it is showing up in his explore questions, he can't get any of those comprehension questions right.

Few feelings of cognitive tension. Interestingly, there were was little evidence that Jen felt any cognitive tension during the semester, and in her follow-up interview, she concurred. When I asked Jen if she had felt any discomfort with her ideas or sensed any tension between her own conceptions and those offered by others in the course, she said no, except for when she felt resistant to Nieto's (2003) textbook. Jen said:

The only time I'm thinking about [as an instance of when I felt tension] is in reading Nieto in some of the articles I agreed with them to a certain extent and it's like, okay, I'm reading along. I agree with them. I agree with them. And then all the sudden they'll make a blanket statement or a generalized statement, and I was like, 'Whoa, I don't agree with that.' And kind of with Nieto because she was so—everyone is like this; every school is like this. And yes, I agree with that to some extent, but not really. Maybe I do more this way. And it kind of—I really felt at odds with that. Because yes, I agreed with her, but it was almost like she was just gloom and doom. You're reading her and it's never going to change, it's

always going to be like this. And I don't agree with that part of it. She would go overboard. But I can't really understand where I started disagreeing with her. Jen did not sense any other tensions between her ideas and those offered within the course. She said,

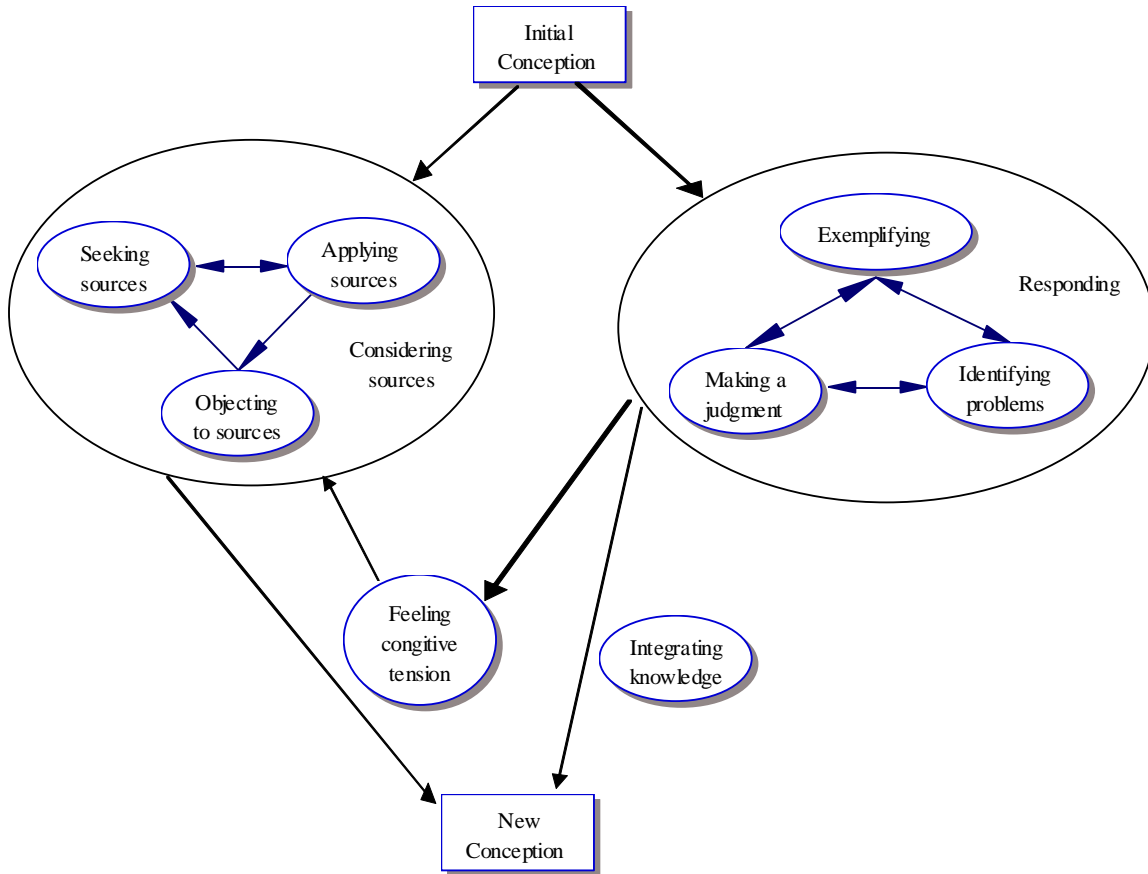
I really didn't see us [Jen and her classmates] disagreeing on any major issues. ... I felt like we could all relate. Like we were on the same page. Even though we all came from different levels of experience and we all had different backgrounds. I was really surprised that we all agreed. But it felt okay. Even if somebody had disagreed I think that would have been okay given that atmosphere. So I didn't have any problems with that at all.

Summary of Jen's Learning

Jen constructed conceptions in some of the same ways as Nena: by considering and responding to sources for knowledge; however, there were a few distinct differences. Jen overwhelmingly used sources from her school, including teachers and her own teaching experiences, to glean information and often found that knowledge to be incongruent with knowledge offered by sources within the course, such as the textbook and other readings. Therefore, she often objected to the course-related sources for knowledge or judged them to be inaccurate or over-generalized. Additionally, Jen rarely felt any cognitive tension, but when she did find tension between the knowledge offered by course-related sources and by her school-based experiences, she opted to use her own experiences as her primary source for knowledge. Jen did not seem to integrate the ideas provided within the course; even though she sometimes used the language of the course,

she used that language in making points that seemed incongruent with the intent of the professor and the course readings. Below is a representation of Jen's ways of constructing conceptions:

Figure 6.2. Jen's aggregated model.



Jen told me in her follow-up interview that she felt like she already knew about many of the concepts offered within the class because of her participation with racially diverse students when she worked as a teaching assistant in a special education program:

Well, when I was doing special ed., the majority of our students were African American, Hispanic, and Asian. And there were very few White children. And so I was really exposed to them really hard core—more than I wanted to know about

their home life [laughs]. But it definitely shows you where people are coming from in different economic statuses. And I didn't know that much about different areas and socio-economic statuses before I started working with those kids. But they, the students themselves, well that learning experience, that started a long time ago. Right when I first started college. So I feel like I've had a pretty good experience for that already. Before I started this class.

Many of Jen's goals for the course were unfulfilled. After the course ended, she still wanted to understand how particular cultural groups act and how those actions blend when groups come together. This could be due to her own experiences within a family in which racial cultures are being blended (e.g., her mother and step-father are a biracial couple, and her sister and brother-in-law have adopted a biracial baby). This was a topic that was rarely discussed in class. She said:

I wish that we had been able to explore different cultures more than what we did in class. And say, 'okay, for this week we're going to focus on this culture. And let's tear this culture apart and look at it and see what we can learn.' I think we did okay exploring cultures. I wish we had been more in-depth on that. ... you know, as far as religion, as far as the rules in the house, what do they do for fun?

What are they interested in? What are some holidays that they celebrate?

Jen also wanted to learn about specific strategies for teaching reading and writing, but found no strategies offered within the readings and textbook and only a few in the class. She found the ABCs project, in which she interviewed someone, to be a useful example of how interviewing could be used as a strategy for instruction. She also learned from

some of the strategies modeled in class through the professor's lessons. For example, she told me, "I liked it when we made posters [referring to the text summary posters made in the eighth class meeting]. That was helpful—just the more hands-on stuff is what I preferred more so than the discussion."

When I asked her during the follow-up interview, "What do you think you learned from the class?" She said, laughingly, "I learned that Nieto is a very opinionated woman!"

Epilogue

Jen is still happily working as a library technician in the same district and taking courses to complete her teaching certification.

CHAPTER SEVEN

SUMMARY, DISCUSSION, AND IMPLICATIONS

The purpose of this study was to investigate learning that occurred in a teacher education course intended to integrate information about teaching methods for reading and writing with multicultural education (including, especially culturally responsive teaching). This is the type of course that several proponents of multicultural education (e.g., Banks, 1991; Banks & Banks, 1997; Nieto, 2001; Sleeter, 2001) suggest as effective; however, most descriptions of effectiveness describe course contents and learning outcomes without providing a sense of what process learners went through (e.g., Au, 1998; Au & Raphael, 2000; García, 2003; Ladson-Billings, 1994a). This study explores learning as a process by which some teachers' conceptions evolved over time.

This chapter is divided into three sections. The first section summarizes findings as they relate to each research question. The second section describes limitations of the study. The third section synthesizes the findings and provides implications for theory, research, and practice.

Summary of Findings

Research Question 1: What are teachers' conceptions about course-related topics? How do their conceptions shift?

Course topics were identified as culture, language, literacy, relational connections, and equitable educational opportunities. It is important to note that each member's conceptions about these topics developed in its own way. Here I describe the *general* ways in which conceptions were stated and the conceptual shifts that occurred.

Conceptions about culture, language, and literacy shifted in ways that closely matched the course professor's intended goals (either stated by the professor or inferred by me) and the course-related sources; however, for conceptions about relational connections and equitable educational opportunities members aligned their conceptions with course-related sources to varying degrees.

Conceptions about culture, language, and literacy. Members' conceptions about each of these topics—culture, language, and literacy—included expanded definitions by the end of the semester. These definitions echoed what the professor had communicated to the group; however, members seemed to go beyond echoing. When participants in this study sought, objected to and responded to sources for knowledge, they were not just echoing language; they were in the process of making that language their own. Members continued to identify cultural groups in terms of race and ethnicity (perhaps a more common/traditional way to conceive of culture) throughout the course. However, they broadened their conceptions about culture to include other groups as well, including families, national groups, communities, and groups with the same educational levels. By the end of the course, some members suggested that culture is defined not only by group affiliations, but also by perspectives and values one holds and one's everyday behaviors. Moreover, the members explained how their own cultural affiliations have influenced them as they became more sensitive to their own cultural understandings. They also seemed to accept that they have cultural biases that could influence their instruction in a classroom. Ways to teach about culture—both by teaching about unfamiliar cultural

groups as well as by teaching students to recognize their own cultural backgrounds—were explored, especially at the semester's end.

As the semester wore on, conceptions about language expanded to consider language as a means for communication and became inter-related to conceptions of literacy, something beyond the national language one speaks. Many statements indicated that the members were considering how they might teach any student, regardless of a student's home language, by recognizing what language knowledge a student brings and using that as a building block for learning. Early conceptions about literacy were related more to school types of literacy practices (e.g., concepts of print, reading a book, writing a story), but by the end of the semester most conceptions more broadly defined literacy as the ability to read, write, and speak within particular cultural and linguistic groups. Conceptions about literacy instruction consistently advocated the need to help students make cognitive connections among information sources. Conceptions about literacy assessment referenced standardized tests throughout the semester, but toward the end also included informal assessments, such as home visits and informal interviews with a student. For a few teachers, including Nena, proficiency in linguistic and literate communication also came to be seen as a key to empowerment.

Conceptions about relational connections and equitable educational opportunities. Whereas members' conceptions about culture, language, and literacy seemed to generally fall in line with the readings and guest speakers chosen by the professor, members' conceptions about relational connections and equitable educational opportunities did not shift in such a clear-cut way. All of the members began the semester

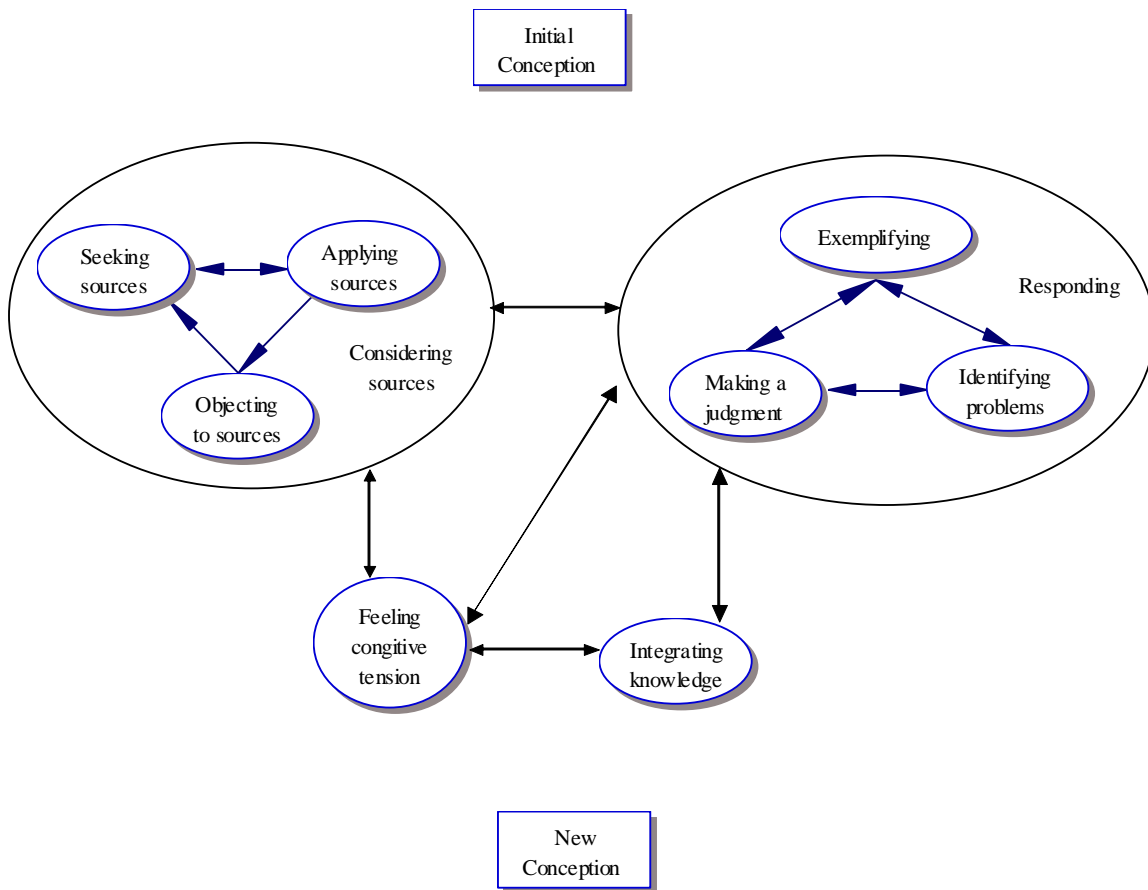
generally agreeing with course-related sources for knowledge that relational connections and equitable educational opportunities are worthwhile endeavors, and these conceptions persisted throughout the semester. Members also readily identified problems within educational systems caused by uncaring teachers or inequitable situations from the beginning of the course to the end. In many of the problems identified by members of the class, students were said to be put at a disadvantage when they are tracked into specific ability groups or when instructional practices seem to favor one racial group over another.

A few statements, however, seemed to contradict somewhat the intended message of the readings that teachers should be involved with their students' lives (Nieto, 2003; Opitz, 1998). During the semester, some participants expressed wariness about getting "too involved" with students' lives and worry that relational connections could go too far. Other comments offered suggestions for getting involved (i.e., caring) because of the belief that children would not have caring adults in their lives otherwise. Some comments (all made by White students in the class) advocated the need for equitable opportunities for White students who come from wealthy communities in direct contrast to course-related sources that addressed the need for equitable educational opportunities for historically under-represented populations (e.g., racial minorities, people with low incomes [e.g., Delpit, 1995; Nieto, 2002; Strickland, 1994/1998]). While there were few of these comments, they were interesting in that they used the language offered in course-related sources (e.g., "caring," "one-on-one time"), but in ways that differed from the

intentions of the sources for that language (e.g., Flores, Cousin, & Díaz, 1991/1998; Jackson, 1994/1998; Powell, 1989/1998; Twiss, 1997/1998).

Research Question 2: What are the processes through which the teachers' conceptions shift during the semester?

Figure 7.1. Conceptual map of cognitive processing.



The conceptual map is based on my analysis of the ways in which members constructed their conceptions shows the multitude of possibilities. It is also based on several assumptions. I assumed that cognitive processing in socially shared cognition is not necessarily different from individual cognition; therefore data related to both informed the development of the map (this assumption was based on and supported by

theories about conceptual change, socially shared cognition, and socio-cultural theory [Duit & Treagust, 2003; Vygotsky, 1978; Wertsch, 1991, 1998]). I also assumed that the amount of time taken into consideration (from moments to months) did not have to be consistent; that is, the map was created to represent cognition as a short-term and long-term process. Given that I based this map on topically related statements that accrued throughout the semester, I assumed that on-going cognitive processing of conceptions did, in fact, take place; however, this assumption does not provide for the possibility that conceptions could decay (Rumelhart, 1991) or be forgotten altogether by a learner. The conceptual map represents conceptual shifts that occurred as members constructed knowledge, moving back and forth from initial conceptions to new conceptions as members considered sources, responded, felt tensions, and integrated knowledge gleaned from information sources.

There are many feedback loops in the map; however, a few are worthy of specific attention. The first feedback loop is labeled *responding* and is important because complex maps always seemed to include responding; thus, responding seemed to be a commonly used process for thinking. The second feedback loop is labeled *considering sources* and indicates that conceptions developed in close proximity to sources for knowledge, and statements almost always alluded to these sources either explicitly (e.g., quoting or referring to a source) or implicitly (i.e., borrowing specific words and phrases from sources). Participants spend much of their effort moving between responding and considering sources, perhaps evidence of their thoughtful attendance to the course-related sources for information. Furthermore, initial conceptions come from previous cognitive

processes that have already taken place (disregarding decay or forgetfulness), also representing the on-going nature of the construction of conceptions.

Research Question 3: What are individual differences in teachers' learning and processing in a course?

Nena's and Jen's cases describe how two individuals learned. Nena seemed to undergo a series of conceptual changes, constructing conceptions in many ways, often simultaneously, and embracing course-related sources for knowledge. She exited the course feeling as though she had undergone a "transformative process" and felt compelled to ask for a transfer from the school where she worked because she felt that her new understandings about education were too different from those of her colleagues and were not being accepted. On the other hand, Jen's goals for the course seemed to conflict with the professor's intentions, and Jen seemed to rely on sources for knowledge provided within her school. Jen often objected to course-related sources for knowledge, felt tensions between the knowledge offered within those sources and her own conceptions, and responded by making judgments and identifying problems with the concepts provided within course-related sources. Her constructive processes alternated between considering sources, responding, and feeling cognitive tension; however, Jen did not seem to integrate knowledge offered within the course within her conceptions. Jen exited the course still wanting information and knowledge about culture and literacy, and still asking, "What can I do in my classroom?"

Limitations

As with any research, the process of narration and explanation always involves a certain degree of simplification of otherwise complex experiences. Therefore, I warn the reader that my analysis and interpretations are inherently reductive; although, I have tried to convey as much complexity as I could. In the same regard, perhaps this limitation—the inherent over-simplicity of this report—is not only indicative of my need to simplify to communicate but also applies to my assumptions that framed the study.

Using language to infer conceptual change and processing is inherently limited, and I sometimes felt unsure of my inferences. I addressed my uncertainties by rereading statements and asking my supervisor to read them to see if she agreed or disagreed with my categorization. Additional data sources, such as observations of the participants in the schools where they worked, would have added dimension to my findings.

In other instances, I used members' self-reported descriptions of their cognitive processes and assume that they were honest and self-aware. These descriptions seemed to concur with the inferences I drew; however, there is always the chance that members—because they knew me well after participating in a class for a semester alongside me or because they reported their learning processes for the course professor in assignments—could have provided descriptions they thought we were “looking for.” I hope this is not the case and feel certain that we did not consciously communicate that a certain way of learning was better than another, but it is a possibility that the professor and I sent that message unconsciously.

This brings me to another potential limitation of the study: my relationship with the course professor. She and I have been friends and professional colleagues for several years. She invited me to work within the course so that I could learn from what she was trying to achieve within the design of the course, and we sometimes talked outside the class meetings about general ideas for her instruction. However, I was careful not to disclose any information that individual members of the class offered in the focus group meetings. Nonetheless, our friendly relationship might have interfered with my need to view her instruction with a somewhat objective lens.

Any interpretation of the findings in this study must also consider the context of this study. The class was small (with nine members total) and data were collected from only eight members. Of the eight, seven were women, and having mostly women in the focus groups might have affected group dynamics. In addition, I noticed that all members of the group were cordial and friendly, even in the face of significant differences among their conceptions. I also noticed that sometimes when tensions arose between members' conceptions, one member would fall silent while another took over the conversation. I asked the members about these silences during our follow-up interviews and they confirmed my suspicion that sometimes they stopped talking to avoid inter-personal conflicts. Of note, no member told me that he or she felt silenced by someone else in the group. Moreover, if this study is compared to other courses also designed to integrate instruction in teaching methods with explicit discussions of social issues such as racism, White privilege, discrimination, then I remind the reader that this study included four out-of-class focus group meetings during the semester, and all but one member told me in

their follow-up interview that these discussions aided in their learning. As suggested by Harrington and Hathaway (1994), face-to-face discussions seemed to aid in learning about sensitive topics such as racism and discrimination.

Finally, the study took place over a four month period, an extremely short time span for considering learning, especially the possibility for change—something I think of as rather like an economic recession: you do not know it has happened until at least six months after the start. Time was also an important factor when I looked across data sources to interpret how an individual's conceptions about a particular topic shifted. As I took more time into consideration, the chance that a conception would have been constructed seemed to increase and the potential for complexity within that constructive system increased. Therefore, I am left to wonder what might have been had I been able to follow these learners over a longer period of time.

Discussion and Implications

The following section offers insights into *what was learned, how the process of learning took place, and examining individual differences*. Throughout the section, I recap particular findings, identify intersections between these findings and to previous studies on teachers' learning, and make suggestions for future research directions.

What Was Learned: Appropriating and Approximating Tools for Thinking

In understanding the learning that took place within this course, I first examined what was learned. I described these findings in Chapter 4 of this study, showing how members of the group conceived of topics related to the course in relation to how they were communicated within the course and how their conceptions changed. I prefer the term conceptual shift to conceptual change because it does not rely on the preconceived standard of accommodation (Piaget, 1977) that usually defines classical conceptual change theory (Duit & Treagust, 2003). In this section I argue that conceptual shifts might be better described as appropriations and approximations (Wertsch, 1998) of language and knowledge.

Seeing conceptual shifts as appropriation. Findings suggest that members of the group appropriated the language of the course-related sources as tools for thinking about multicultural education and culturally responsive literacy instruction (Britzman, 1991; Wertsch, 1998). Wertsch defined *appropriation* as the process of “taking something that belongs to others and making it one’s own” (p. 53). Statements illustrating *applying sources* were often recognizable dialogic echoes (Bakhtin, 1981) of terms and phrases—sometimes even full quotations—from sources for knowledge. Britzman (1991) used

Bakhtinian theory as a lens to view teacher education, suggesting that beginning teachers must navigate a cacophonous amount of information and social contexts in learning to teach. She wrote that beginning teachers undergo a dialogic process of socialization into the teaching profession in order to appropriate the cultural knowledge one needs when he/she is called “teacher.” On the other hand, in this study beginning teachers began this socialization process by relating to class-based sources for knowledge (e.g., Lauren’s lessons, the textbook, course readings, classmates) by summarizing, quoting, or explicitly referring to them; however, members also related to out-of-class sources for knowledge, echoing what they had heard teachers say at the schools where they work and what other professors from other courses within their teacher education program said. However, echoing was not the only way these participants responded to information.

Participants in this study seemed to appropriate the language of the course as a tool for thinking about culturally responsive literacy instruction. For example, when members discussed their conceptions, they often sought additional sources for knowledge, responded to conceptions from course-related sources by exemplifying and evaluating them, and identified spaces for conflict and negotiation among those conceptions. These teachers referred to the course-related sources in their talk and writing multiple times over the semester and used them to explain their own thinking. In her study of learning in a graduate-level educational psychology course, Na (2003) found similar dialogic echoes of course-related sources within computer-mediated conversations between the learners. However, in this study (as in Na’s) echoing was not the only process taking place. Members in this course were extending their learning far

beyond simple echoing; they seemed to be appropriating the language offered by course-related sources as cultural tools to know how to teach and how to think about teaching.

Of course, critics would suggest that having a tool does not necessarily mean that one will use it. Pragmatic critics of constructionist theories of learning (e.g., Kivinen & Ristelä, 2003) suggest that constructivist researchers who concentrate only on the mind's work neglect to examine whether or not the mind's work affects everyday action. Research on conceptual change learning theory (see review in Duit & Treagust, 2003), suggests that, even if conceptual shifts in the cognitive plane (or "knowing that" [Ryle, 1949/1984]) takes place, teachers often fail to "know how" (Ryle 1949/1984), that is, to practice their new understandings (e.g., Marion, Hewson, Tabachnick, & Blomker, 1999; Lemberger, Hewson, & Park, 1999). There is little in this study to refute this claim because I did not collect observations of participants' teaching in their various roles as teachers' assistants and tutors (although some participants were not actively teaching at the time of the study); however, within their talk participants who seemed to have appropriated the language of the course gave teaching examples that suggested that they were at least thinking about applying their understandings from the course to their practice. Research suggests that these understandings might have also laid the groundwork for them to become mindful, reflective, flexible, and knowledgeable practitioners (Berliner, 2001; Britzman, 1991; Darling-Hammond, 1996; Schön, 1988).

Take, for example, the ways in which many of the members' conceptions about culture, language, and literacy shifted to include broader definitions for each term. This finding is similar to Risko, Peters, and McAllister's (1996) findings that beginning

teachers moved from “unidimensional conceptions” to “adopting more perspectives” (p. 111-112). Cultural tools, according to Wertsch (1991), are socially defined mediational means for doing work, including the work of thinking as described in Popper’s third world (Bereiter, 1994, 2002; Popper, 1972). Wertsch proposed that these tools can include numerical systems, written texts, and technological developments. In teaching, cultural tools can include the language teachers use to define their knowledge about their work and, in turn, their language provides tools for thinking. Members’ broadened conceptions about culture, language, and literacy can be thought of as a tool for making *mindful* teachers (Langer, 1997). Langer advocated the need for people to learn to be aware and attentive to what might otherwise go unnoticed. Effective instruction relies on a teacher’s mindful awareness (Berliner, 2001; Maloch, Fine, & Flint, 2002) of students’ cultural, linguistic, and literate backgrounds, development, and needs (García, 2003; Ladson-Billings, 1994a, 2001; Rueda & García, 2003). Likewise, Christiansen (2004) wrote, “when we [researchers and teachers] expand the definition of literacy, we see that students demonstrate incredible ability to learn.” The same can be said for definitions of culture and language. By expanding the way they defined culture, language, and literacy, members of the class seemed to become more mindful, aware, and attentive to their own cultural influences as well as more openly aware of the need to investigate a child’s linguistic and cultural background as a way to undergird literacy instruction. They also seemed to become more mindful of how they perceive others; more mindful of how they express themselves with students; more mindful of the multiple ways in which language

can communicate meanings; more mindful of the literacies children carry from home as they enter a classroom doorway.

Seeing conceptual shifts as approximation. There were also instances when appropriation did not seem to occur, and given the findings from this study, these are best considered to be instances of *approximation*. Approximation occurs when a learner begins to use the language of another person or group, but the learner might use it in ways that are inconsistent with the source (Wertsch, 1998). In this study, several members offered comments in which they discussed the need for equitable educational opportunities, a topic woven throughout the course-related sources; however, participants sometimes offered examples of how wealthy White children are denied equitable opportunities. These messages directly contrasted with the messages in course-related sources that suggested that equitable opportunities are more necessary for historically under-represented groups (not wealthy Whites [e.g., McIntosh, 1988]). For example, a few teachers, including Jen, offered statements that seemed to contradict course-related sources, but they did not seem to recognize many of the disparities. In some studies of multicultural education and changing beliefs and/or knowledge, if participants offered comments suggesting that Whites are deserving of special considerations for equity issues, their comments would be considered to be “resistance” to learning (e.g., Fry & McKinney, 1997) or as the perseverance of *misconceptions* rather than conceptual change (e.g., Tillema, 1997). But in this study, when the language of the course-related sources was echoed without seeming to have been integrated as knowledge, this use of language can be viewed as approximation.

In this study I consider comments like Jen's to be more like approximations (Britzman, 1991; Wertsch, 1998) because part of her message (that equitable opportunities are necessary in general) still echoed course-related sources. In her study of secondary student teachers, Britzman (1991) examined how beginning teachers' identities developed due to their socialization into a new Discourse (Gee, 2000). Britzman suggested that when beginning teachers encountered the culture of schools, they struggled as cultural apprentices to appropriate the language of teaching and the "heteroglossia" (Bakhtin, 1981) present in schools. Understanding teacher education as a means of apprenticeship (Carter, 2004) provides a way to understand how learners begin to appropriate tools for thinking about teaching. Like Britzman's study, this study provides a lens through which to view teacher education both as an apprenticeship into the language of teaching and as a description of how that language provides tools for thinking about teaching. Of course, little can be said about whether or not approximations will eventually become appropriations, especially given that the course itself has ended and all of the teachers who were part of it have gone in separate directions. Their conceptual changes are, in fact, ultimately unpredictable.

How the Processes of Learning Took Place: Recursive and Influential Shifts

In the previous section, learning is viewed as the approximation and appropriation of knowledge; however, that view does not fully explain how the learners went through the process of appropriation and approximation. The conceptual map in Chapter Five provides a Connectionist account of the process of appropriation. Wertsch (1998) suggested that "connectionist accounts provide ways of describing the skills involved in

using such tools and how these skills emerge in the practice of using them” (p. 52). He claimed that Connectionist theory (Clark 1993; Rumelhart, 1991) “provide[s] a way to formulate how processes in an agent [individual] might be said to ‘wrap around’ cultural tools in such a way that mediated action does not ‘disappear’ into the agent” (p. 51).

In this study, the conceptual map offered in this study represents how members of the class built knowledge about the topics within the course context via reciprocally influential shifts in the cognitive processing of related conceptions. This model is not a Connectionist model of learning; however, Connectionist theory informed its production. In creating the conceptual map, I utilized a modified version of Connectionist theory (or neo-Connectionist) model of learning by adhering to several of Rumelhart’s (1991) seven characteristics of Connectionist models. Rumelhart proposed that Connectionist theory includes seven key characteristics (p. 136):

- a set of processing units
- a state of activation defined over the processing units
- an output function for each unit that maps its state of activation into an output
- a pattern of connectivity among units
- an activation rule for combining the inputs impinging on a unit with its current state to produce a new level of activation for the unit
- a learning rule whereby patterns of connectivity are modified by experience
- an environment within which the system must operate

The model I propose satisfies many of Rumelhart’s characteristics, including:

- a set of processing units

- a state of activation among the units (defined by input and output links)
- a pattern of connectivity among the units
- patterns of connectivity are modified by experience; modifications emerge as new conceptions are created from initial conceptions, and the process is repeated with links flowing in new directions)
- an environment within which the system must operate; the system presented in the final map provides this environment

The conceptual map presented in this study, however, is not a Connectionist model in the traditional sense. This model is a very rough version of Rumelhart's precise architecture of codes and connections. Rumelhart, when he defined these characteristics, had in mind a quantitative model; however, this study provides a qualitative model for learning. Thus, the numerical activation rule for each processing unit is left out in this model; yet, for many Connectionist theorists those activation codes are central to their theoretical stance. Nonetheless, Clark (1993) advocated that Connectionist theory shift its focus from code-oriented, static conceptions of subject matter (i.e., the content of cognition) to a process-oriented view and that address the issues surrounding conceptual change. Clark suggested that Connectionist theorists should begin to attempt to create models that more practically address human learning. Although I believe that Clark, a traditional Connectionist, might dismiss this model as "folk psychology" because of its lack of computational evidence, I also believe that models such as this provide a beginning to understanding the mind "as process" rather than "mind as text" (p. 8) or "mind as code" (p. 13), as Clark advocated. Clark also suggested that environmental factors (in this model, the course context) play a

strong role in Connectionist models; likewise, the course-related sources seemed to play a major part in the learning that took place.

In creating this model, I also borrowed from socio-cultural theories of learning (Bakhtin, 1981; Gee, 2000; Vygotsky, 1978; Wertsch, 1991, 1998). Bakhtin and Vygotsky claimed that thought is a socio-cultural activity; that is, thought occurs within socially defined spaces and is possible because of social interactions. Adding to Bakhtinian theory, Gee suggested that learners take on the discourse of particular groups as they interact within a Discourse (an agreed-upon language unique to that group). Aligning Vygotskian theory with Bakhtinian theory, Wertsch suggested that learners not only acquire language through socially mediated interactions, but all humans create knowledge through use of language. For Wertsch (and others) language embodies knowledge. Thus, I used the language used by these participants to infer how they were thinking about course-related topics and to create the conceptual map. The conceptual map evidences how learners in the course appropriated the cultural tools (i.e., language) for thinking about culturally responsive literacy pedagogy (Au & Raphael, 2000; García, 2003; Nieto, 2002; Opitz, 1998) through a series of recursive, reciprocally influential processes for understanding.

The important words here are *reciprocal* and *influential*, for they are not usually words used together in theories about developmental learning, especially not transformative learning (Mezirow, 1991; Mezirow & Associates, 1998, 2000) or conceptual change theory (Duit & Treagust, 2003; Guzzetti & Hynd, 1998). By using the words reciprocal and influential together here, I mean that members used the same

cognitive processes over and over again and that their learning developed because of, rather than in spite of, this recursive system. Studies that frame findings using developmental theories such as conceptual change theory and transformative learning theory (e.g., Risko, Peter, & McAllister, 1996; Saavedra, 1996; Taylor, 1997) would consider the reciprocal nature of the cognitive processing described in this study to be regressive rather than progressive. Studies of teachers' conceptual changes usually offer a before-and-after picture of learning and somehow suggest that there were phases or stages that learners went through (e.g., Lin & Gorrell, 2001; Risko, Peter, & McAllister, 1996). For example, Risko, Peter, & McAllister (1996) traced how preservice teachers developed conceptions related to literacy instruction for diverse student populations and illustrated the ways in which the beginning teachers learned tools for thinking about their teaching. Risko, Peter, and McAllister suggested that the teachers moved sequentially from "unidimensional conceptions" to "adopting more perspectives" to "a period of cognitive disarray" and then the ability to "resolve problems" (pp. 115-116). On close inspection, these phases are not so different from the conceptual shifts (e.g., moving from simple definitions for culture, and language, literacy to more complex definitions) and processes (e.g., cognitive tension and identifying problems) described in this study. Conceptual shifts in this study are evident in comparisons of participants' initial and new conceptions. But by examining how initial conceptions were constructed by modeling the pathways for processing using statements related to a topic, I traced how conceptual shifts occurred as a series of recursively influential processes rather a phase-specific process.

This recursive movement within participants' cognitive processing is illustrated in the conceptual map as a series of feedback loops, and these processes are essential to the construction of new conceptions. Perhaps this recursive movement is best explained by Spiro, Coulson, Feltovich, and Anderson's (1988) cognitive flexibility theory. They defined cognitive flexibility as the ability to adapt knowledge to various contextualized circumstances without over-generalizing the efficacy of prior knowledge and with the ability to assemble new knowledge through encounters with new circumstances. Spiro and his colleagues claimed that learners who aim to become expert in ill-structured domains of knowledge (e.g., teaching) benefit from beginning their learning within environments that encourage cognitive flexibility. Boling (2004) showed that beginning teachers who encounter a course in which they are asked to construct conceptions in multiple ways attain cognitive flexibility among their conceptions and, as a result, are better equipped to use their knowledge about literacy instruction with diverse populations. Similarly, the beginning teachers in this study flexibly adapted their knowledge, revealed in the multiple pathways in which they constructed conceptions, and this was essential to their Knowledge Building about culturally responsive literacy instruction. Berliner (2001) suggested that "expert" teachers are able to use their knowledge flexibly; therefore, we are left to wonder if his expert teachers were able to hone their cognitive flexibility in courses like this one. Whether or not beginning teachers from this study will apply the same flexibility in their practice is yet to be known. Future research could investigate whether and how beginning teachers' cognitive flexibility

might carry on as they leave the confines of a teacher education course and enter the profession.

Examining Individual Differences: Seeing the Learner in the Learning

There were many differences in the ways in which learners in the course appropriated and approximated language and knowledge offered within the course. Upon reviewing the cases, several factors seem important determinants as to whether or not learners would undergo appropriation during a teacher education course, including multiple contexts for learning, learners' goals, epistemological assumptions made by learners and course professors, and a learner's personal involvement with topics related to a course. These factors are often left out of evaluative reviews of teacher education courses (Sleeter, 2001) and descriptions of whether or not learning occurred for teachers (e.g., Alquist, 1991; Boling, 2004; Fry & McKinney, 1997; James, 1996; McFalls & Cobb-Roberts, 2001; Saavedra, 1996; Tillema, 1997); however, if teacher educators are to address learner-centered concerns within their own courses, these are areas worthy of attention.

Contexts for learning and goals. Jen worked within a school where she liked and respected the teachers, and this provided for Jen a context for learning that seemed to conflict with the course context. Some researchers of learning suggest that contextual factors are important considerations and learners often take information from multiple contexts (e.g., Watters & Ginns, 1997); however, in studies of teacher education this factor is usually avoided altogether or relegated to caveat statements (e.g., Saavedra, [1996] called this "context dynamics" but did not go on to explain them). Studies about

teacher education that explore immersion and field experiences (e.g., Aguilar & Pohan, 1998; Stachowski & Mahan, 1998) might be on the same track here because they investigate contexts for teachers' learning (schools and communities) beyond just teacher education courses. For example, Stachowski and Mahan provided two follow-up surveys to teachers who had been immersed in overseas schools. But again, studies like these describe and/or compare one or two contexts (here or there ... K-12 schools or university settings) and then suggest their usefulness/effectiveness (Sleeter, 2001). They do not provide a description of how multiple contexts related to a learner's process for learning. In this study, Jen's multiple contexts seemed to be a factor in determining what sources for knowledge she valued. Additional research will be necessary to show other ways in which contextual factors influence how conceptions are constructed.

In addition to contextual factors, a learner's goals also influence how learning occurs. Jen had multiple goals for the course: to satisfy course requirements, to use it in part to earn her teaching certification, to understand more about racial blending, to learn more about cultures other than her own, and to carry from the course teaching techniques that she could implement right away with her tutoring students. Jen satisfied some of these goals: she passed the course and was one step further in earning her teaching certification and master's degree. Although a learning styles framework (Schmeck, Ribich, & Ramanaiah, 1977) might have portrayed Jen as a methodological learner (that is, one who concentrates primarily on satisfying course requirements and usually does so satisfactorily; however, that learner does not seem to carry away knowledge from the course), Jen seemed also to critically evaluate and analyze course-related sources for

knowledge, evidence of deep processing. Jen's learning did not seem to be dependent on one "style" or another. Her goals—including her goals to become a certified teacher, to complete the course satisfactorily, to understand how cultural studies and racial blending connect, to acquire information about methods or lessons that she could teach in her own school—seemed to be determining factors for which sources for knowledge she valued. There are several studies of how learners' goals and motivations affect their learning (e.g., Pintrich, 2000; Ryan & Deci, 2000). Pintrich suggested that more research needs to be done to understand how goals affect cognition. Findings from this study show that learners' multiple goals might affect what sources for knowledge a learner embraces and differences in goals orientation might also help to determine whether a learner moves beyond approximating knowledge. Future studies of teachers' learning might further examine how goals and motivations might influence how they approach a course that integrates socio-political discussions with pedagogical methods instruction, what sources for knowledge learners value, and how this issue might be addressed in instruction.

Personal investment in topics. Nena's case provides an entirely different understanding of individual differences in learning; she seemed to have a personal investment in learning about the topics introduced in the course. Nena described her learning as a transformative experience. Transformative learning theory (Mezirow, 1998; Mezirow & Associates, 1990, 2000) has been studied extensively with adult learners within a variety of learning situations (Taylor, 1997; Mezirow & Associates, 2000). Transformation is thought of as empowering and "emancipating ourselves from taken-for-granted assumptions about social being" (Mezirow, 1998, p. 70). When transformative

learning happens with teachers, researchers suggest that transformation provides for teachers a way to engage in culturally responsive instruction (Gilbert, 2003; He & Phillion, 2002; Saavedra, 1996), and Nena's case seems to concur with those findings. However, Nena's case also illustrates the under-belly of transformative learning, something not often discussed in studies of teachers' transformative learning. Having experienced transformation, Nena felt uncomfortable in her place of work and asked to be transferred to a different school. These results are aligned with what we know of transformative learning (i.e., that a learner would disassociate with a social affinity group and opt for a new group [Mezirow, 1998]). Future research might investigate how teachers who undergo transformative learning deal with this kind of change.

Findings also suggest that Nena underwent several conceptual changes/shifts that influenced her transformative learning. Alexander (1998) might have called her conceptual changes "micro-transformations." Likewise, Lin and Gorrell (2001) studied how preservice teachers' conceptual changes "transform" their ways of thinking about teaching and learning. There is some evidence that the two terms—conceptual change and transformation—are integrally linked (although I fear that the use of the term transformation has achieved buzzword status and might require specification). Nena's case also offers the possibility that conceptual change (Duit & Treagust, 2003; Guzzetti & Hynd, 1998) and transformative learning (Mezirow, 1991; Mezirow & Associates, 1990, 2000; Taylor, 1997) are integrally related, especially when a learner has a personal investment in the topics offered within a course. Given her example, it seems as though a learner who undergoes transformative learning must also have undergone several

conceptual changes (or micro-transformations); however the reverse is not necessarily the true. Although I do not believe that conceptual changes can simply accumulate to produce transformation (Deithloff, 2002), I wondered if there was something about Nena's multiple conceptual changes that contributed to her sense of transformation. This might be an interesting area for research about the intersections between Transformative Learning theory and Conceptual Change theory.

On Teacher Education for Culturally Responsive Pedagogy

The course that served as the focus for this study integrated instruction in literacy methods and cultural responsiveness in a university-based (i.e., non-field-based) setting. Several researchers of teacher education have suggested that field-based methods courses (in under-served communities) offer the best means for preparing teachers to use culturally responsive pedagogy (Au, 1998; Banks, 1991; Banks & Banks, 1997; Cochran-Smith, 2000; Sleeter, 2001), but also suggest that the content of methods courses shift to include discussions and teaching cases (i.e., narrative case studies) that include issues about racism, discrimination, and culture (Banks & Banks, 1997; Moje & Wade, 1997; Nieto, 2001; Sleeter, 2001). Transformative pedagogy seems to be an increasingly popular method by which to educate teachers about culturally responsive pedagogy within methods courses (Ada & Campoy, 2004; Florio-Ruane, 1997; Schmidt, 2001). Transformative learning theory was integral to my study, for it gave me the lens to recognize Nena's amazing change. Transformative learning theory (Mezirow, 1991, 1998; Mezirow & Associates, 1990, 2000; Taylor, 1997) and the pedagogical theories

that espouse it (e.g., Ada & Campoy, 2004; Cranton, 1996; Schmidt, 2001) seem to propose that transformative pedagogy can be applied in almost any adult learning situation (e.g., He & Phillion, 2002). Transformative pedagogy usually offers a way for learners to reflect on their own experiences, reflect on the experiences of others, and, using this information, determine ways in which they can influence the world around them given what they have learned. Transformative learning is said to provide for the learner a sense of agency and empowerment (Ada & Campoy, 2004; Greene, 1989; Mezirow & Associates, 2000). In theory, transformation seems good—who wouldn't want to be empowered?

Freire's work (1970) is cited in many of pedagogical and theoretical essays and research reports about transformative learning (e.g., Ada & Campoy, 2004; Cranton, 1996; Mezirow, 1991; 1998; Mezirow & Associates, 1990, 2000; Schmidt, 2001). Freire proposed a similar idea in his book *Pedagogy of the Oppressed* and offered it as a way to empower individuals who are oppressed. Freire wrote that in a society where people are being subjugated, even those who are oppressing others are subject to oppression as well, for they often do the work of oppression not consciously, but unconsciously. The key here, however, is that transformative pedagogy either assumes that the learner already feels exploited, or strives to convince a learner that he or she is oppressed and/or that his or her actions are doing it to others. In this study, Jen never seemed convinced of her roles as oppressed/oppressor, but Nena did. Nena felt oppressed by the faculty and administrators in her school, by her experiences as a bilingual person in a monolingual English-speaking society, and by her childhood schooling experiences; Jen did not.

Perhaps this is why Nena reacted to the transformative pedagogical methods (e.g., Schmidt's ABCs model) offered within the course and Jen did not. Ultimately, however, teachers who adhere to transformative pedagogical beliefs must ask themselves two questions: Do I have a responsibility to convince learners that they are oppressed and have oppressed another person or group? What are the implications of this?

When teachers use transformative pedagogical methods (e.g., Ada & Campoy, 2004; Schmidt, 2001), they are asking learners to swallow a bitter pill. By this I mean, teachers are inviting learners to view themselves as victims and/or as victimizers, oppressed and oppressors (Freire, 1970). In the end, learners must decide how they will address those newfound understandings, and in many cases they do so by taking giant life steps (Taylor, 1997). For Nena, this meant that she asked to leave her place of employment (and, in some ironic twist of events, she would have if she had not been told no by her oppressive administrator). If Jen had accepted the premise that she, as a White person, had been the "oppressor," how would she have dealt with that newfound, irking understanding. Would she have felt compelled to address her ill-deeds (as the "oppressor") with her biracial family members? Would she have had the courage to do so? How would they react? Do we rely on the assumption that she (and they) would confront this issue in a constructive way?

I am not suggesting that transformative pedagogy is *never* a worthy pursuit—I can hardly think that it is worthless given what I watched Nena experience—but it should not be used carelessly or as the pervasive model for instruction. Transformative pedagogy requires intensive introspection on the part of the learner and, we know from several

studies (Taylor, 1997), often results in a learner's need to redefine his or her role in the world. Transformation can sometimes mean that the learner must take on major life challenges (e.g., moving, quitting a job, leaving a marriage) (Taylor, 1997; Mezirow & Associates, 2000), so we must ask ourselves as teacher educators whether or not we feel compelled to bring this on within our classrooms and what responsibilities we have in seeing a learner through a transformative experience. Much more research is needed to understand the implications of transformative learning in general, and in teacher education specifically.

By many accounts, the methods utilized in this course to prepare teachers to become multicultural educators (Banks, 1991) could be viewed as "effective." However, the differences among the teachers' learning within this class illustrate the gap between an "effective" method and how teachers learn. If research on multicultural teacher education is to inform beginning teacher educators like me, then research needs to incorporate more than descriptions of effective methods because we know that there is no perfect method. I am asking for research to inform how I, as a beginning teacher educator, might consider the complexity of the learning process and the ways in which individual learners encounter a learning situation. From this study, I learned is that teachers who come to teacher education have varying goals and participate in contexts that reach far beyond the confines of a course like this one. Teachers' goals and contexts might affect how they develop conceptions about course topics. I am not suggesting that these are immutable characteristics, but they offer factors worth contemplating as I begin my career as a teacher educator. Research on teacher education should help me to build

structures that will propel teachers' learning, but also to get to know them as individual learners.

APPENDIX A

Course Syllabus Literacy Methods for Linguistically and Culturally Diverse Students TMU Spring 2004

Instructor: Dr. Lauren
Course Meets: Thursdays 6:30-9:15

Course Description

The purpose of this course is to help you develop, refine, and reflect upon your understandings of literacy education for culturally and linguistically diverse children. Based on current theory and research, this course focuses on issues and trends in the education of children from diverse language and/or cultural backgrounds. Course topics include cultural identity, discrimination, racism, White privilege, linguistic diversity, teaching reading in a bilingual school setting, multicultural literature, and culturally relevant instruction.

Specifically this course is designed to explore, develop, examine your knowledge and beliefs of:

- ❖ Culture and self
- ❖ Sociocultural contexts and functions of schooling
- ❖ Issues of culture in the classroom
- ❖ Cultural and linguistic diversity

Required Course Materials

Nieto, S. (2003). *Affirming diversity: The sociopolitical context of multicultural education*. 4th Edition. New York: Longman.

Opitz, M. (1998). *Literacy Instruction for Culturally and Linguistically Diverse Students: A Collection of Articles and Commentaries* Newark, DE: IRA.

Additional articles, handouts, and resources posted on Blackboard. All students must have an active TMU username. If you do not have an active username, obtain one through computer services. You may do this online from the TMU Homepage. Click on Blackboard; click on the link for those who do not have a username- follow directions.

We will choose a children's novel to read in class. See list on blackboard.

Responsibilities and Assignments

Becoming a teacher and continuing to learn about teaching diverse cultures requires thoughtful reflection in which you question, wonder, and critique your experiences. Your success in this class will be directly related to your willingness to explore your beliefs, actions, and growing understanding of culture, literacy, and children. Each week you are

required to complete the course readings and come prepared to discuss them with others. I will encourage you to take risks in your thinking and to deeply involve yourself in this course.

Course Requirements

1. Online Responses to Readings (5)	20pts
2. ABC's of Cultural Understanding and Communication	
Autobiographic Portfolio	10pts.
Biography	10pts.
Cross Cultural Analysis	5pts.
Cultural Analysis of Differences	20pts.
Communication	5pts.
5. Children's Book Discussion and Response Notebook	10pts.
6. Group Literacy Unit	20pts.

Total **100pts**

Description of Assignments

1. Class Readings/ Reflections (5)

Class readings should be completed according to the course outline (readings cited on a particular date should be read before that class).

For assigned reading responses, write a reflection on Blackboard to include:

1. A summary of three main points you gained from the reading (You may list the points, but elaborate each enough to show your thoughts so you can talk about them and we can understand them.)
2. Your "Aha's!" and connections that you make (What seems particularly true or sensible to you as you read, and why you think so? Does this article connect in any ways to: course lecture content, field experience, and other readings in this course, prior knowledge.)
3. Write about your ponderings or puzzlements. What has left you confused or wondering or uncertain? What didn't you understand? What questions does it raise in your mind?
4. Rating. On a scale of 1-5 (with 1 the most positive and 5 the least) how would you rate this reading in terms of its value to you in learning about culture, diversity and literacy education?

While this is a suggested format, you will be encouraged to create your own personal method of responding to the readings—these may include narrative stories, poems, use of digital pictures, music or other artistic representations.

You will be placed with others in a small online discussion group. Because we will use Blackboard as a forum to extend our conversations, you will be expected to read all postings in your online group folder. As a participant in this group, you will post your

own response and then respond to at least two group members each time a response is due. Your responses should include feedback on others' written responses, as well as insights and experiences you have concerning the week's readings. This is meant to be a conversation about the readings and your insights as you learn in this class. **Please post your reading responses by 8:00pm on the day before the response is due.** Respond to at least two other group members' responses before class (See calendar for dates.)

To earn all 20 points for the online responses, you will respond to each reading assignment with comments that are thoughtful, thorough, and represent your ongoing learning. Specifically, identify at least three important ideas, perhaps additional ones. Responses should use both paraphrasing and direct quotes from the author. At least two different connections will be described and at least two important questions should be identified that are germane to the topic. Be prepared to discuss your online responses in class with others.

If your responses do not reflect the above expectations, you will not receive full credit. Occasionally, I may post a general topic for everyone to respond to.

2. ABC's of Cultural Understanding and Communication

Autobiographic Portfolio

For this assignment, you will write and creatively represent your autobiography illustrating significant life events. Starting with your earliest memories, include family origins, education, family, religion, language, music, recreational hobbies, travels, celebrations, victories, traumatic events, loves. Honors, disappointments and anything else you consider important. You will be encouraged to include artistic representations such as pictures, drawings, music, multiple forms of personal expression to creatively explore and describe your life. You may volunteer to share your autobiographic portfolio or parts of it with others in class but will not be required to do so.

Biography

You will interview and write a biography of someone who is from a different culture than your own and include significant life events such as family origins, education, foods, celebrations, fun, victories, traumatic events, loves, honors, disappointments, and anything else considered important. The person's language and home community should also be considered. Include special words and phrases in the language or dialect. You will schedule to meet with the interviewee at least three times. Interviews may be tape recorded with the interviewee's permission, and must be returned to the interviewee after you have obtained biographical information. If the interviewee does not want to be recorded, then you must respect the interviewee's wishes.

Cross-Cultural Analysis

Closely compare and contrast your own culture with the interviewee's culture by listing similarities and differences. You will study similarities and differences, and analyze cultural perspectives that might reveal cultural conflicts.

Cultural Analysis of Differences

Analyze the cultural differences between you and your interviewee, explaining the differences that cause you discomfort and those that you admire. After each difference, explain in detail why you admire that difference or why that difference makes you feel a bit uncomfortable. Honesty is the key to this assignment. You will write up a thoughtful reflection (5-7 pages) exploring the cultural differences and similarities between you and your interviewee. Include a discussion of your changing beliefs, attitudes, understanding of culture and literacy, and positive and/or negative feelings about completing this project. Other topics may include implications for multicultural teaching and literacy learning, connections to course readings and literacy lessons, and any final thoughts about the significance of this project and being a teacher.

Communication

Write a one-page proposal describing a plan for creating home/school connections and communications for use in your present or future classroom. You may modify the ABCs model or create your own idea that builds connections between home and school. Your plan should be integrated into your curriculum for the entire year and include specific content area (if you are a middle school or high school teacher) and appropriate grade level activities.

3. Children's Book Discussion

You will read one children's book and participate in a book club with others in class. You will be expected to read, respond to, and discuss the book thoughtfully and thoroughly. More details will be given in class.

4. Group Literacy Unit

With others in a small group, you will create a literacy unit using multicultural literature. As a part of this unit, you will create a readers' theatre that is connected to one of the books in your unit. You will present the unit in class. Copies of the unit must be provided for the whole class and include bibliographic information for the piece or pieces of literature you have chosen. This unit will incorporate the cultural richness students bring to the classroom and will address reading, writing, listening, and speaking (See sample literacy units).

Curriculum and Instruction Attendance Policy

Punctuality and attendance are evidence of your commitment to your chosen profession and are required. Please attend class. Be on time, prepared, and participate. Roll will usually be taken within the first five minutes of class.

1. Since your attendance at all sessions is most important, you may receive a letter grade reduction if you are absent for more than 2 class meetings.
2. Patterns of tardiness or early departures may result in a letter grade reduction.
3. In case of emergencies and individual circumstances, exceptions will be made.

For this class you will be graded based on the following standard:

- 1 Absence = no grade reduction
- 2 Absences = no grade reduction
- 3 Absences = 10 points deducted from your final grade

Always bring your course readings and notebooks to class.

Written Expectations:

This is a professional development class. Unless otherwise stated, all turned in assignments must be:

1. Neatly, doubled spaced, and typed.
2. Clearly labeled with appropriate headings and formatting.
3. Mechanically correct. A paper with excessive spelling, grammar, usage, punctuation, or capitalization errors will not receive full credit.
4. Include your name, RDG 5331, course professor, semester, year

***Always keep a rough draft/Xerox copy of any paper you turn in. Your original may be kept.**

Grading Policy:

The final grade is determined by adding the total number of points you have accumulated. 90-100%=A; 80-89%=B; 70-79%=C; 60-69%=D; 59%-below=F

TMU Academic Honesty Policy:

Learning and teaching take place best in an atmosphere of intellectual freedom and openness. All members of the academic community are responsible for supporting freedom and openness through rigorous personal standards of honesty and fairness. Plagiarism and other forms of academic dishonesty undermine the very purpose of the university and diminish the value of an education. Specific sanctions for academic dishonesty are outlined in XXXXX. See this same document for guidelines regarding classroom civility.

Disability Support Services

TMU seeks to provide reasonable accommodations for all qualified individuals with disabilities. This university will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing responsible accommodations as required to afford equal educational opportunity. Students with disabilities who need

special accommodations should register with Disability Support Services and notify the instructor to ensure that the most appropriate accommodations can be provided.

Civility Statement

Students are full partners in fostering a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from the time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any form of behavior that detracts from the learning experience of fellow students. Inappropriate behavior in the classroom may result in request for the offending student to leave class.

Classroom Misconduct

Classroom misconduct may be classified as behavior that disturbs the teaching function, the students or the faculty member during the class period. Examples of misconduct are activated cellular phones and pagers, receiving or giving assistance on tests and independent assignments, challenges to authority, demands for unauthorized special treatment, exiting class, eating or drinking in class, tardiness, submitting papers after class starts, talking during class, sleeping, overt inattentiveness, wearing hats unless for religious or health reasons, reading materials not related to class, shuffling backpacks or notebooks, and dominating conversations.

Class misconduct may be reported in your teacher education papers and/or on a Fitness for the profession (green flag) reported to the TEAR committee.

Class Schedule

Note: This is a “working document;” some changes may be made to reflect the needs, interests, and understandings of the students.

Date	Topic	Reading Assignment (Before Class)
January 22	Syllabus Introductions ABCs Experience Open-ended interviews	
January 29	Understanding Culture and Self Cultural Patterns and Themes	Chapters 1, 2 Nieto Abt-Perkins (Opitz) Honeyghan (Blackboard) Schmidt (Blackboard) Online Introductions
February 5	Prejudice, Racism, Discrimination, Deficit Myths Interview and Cross Cultural Analysis Guest Speaker	Chapter 3 Nieto Flores et.al (Opitz) Powell (Opitz) Response #1 Due
February 12	White privilege Book Discussion Discuss autobiographic process	http://www.utoronto.ca/acc/events/peggy1.htm Autobiographic Portfolio Due Finish Children’s Book To be announced
February 19	Tracking, Standardized Testing, School Inequities	Chapter 4 Nieto Kozol (Blackboard) http://www.fairtest.org/ Response #2 Due
February 26	Cultural Identity Learning styles Discourse Diversity	Chapter 5 Nieto Barnitz (Opitz) Freire (Blackboard)
March 4	Cultural Differences School Performance	Chapter 7 Nieto Delpit (Blackboard) Biography Due
March 11	Learning from Students Family/School connections	Chapter 8 Nieto Bausch (Blackboard) Moll (http://www.ncela.gwu.edu/miscpubs/ncrcdsl1/epr6.htm) Response #3 Due
March 18	No Class	Spring Break
March 25	Culture, Literacy and	McMillion (Blackboard)

	Schooling	Twiss (Opitz) Strickland (Opitz) Response #4 Due Cultural Analysis Due
April 1	Second Language Learners	Chapter 6 Nieto Williams (Blackboard) McGillivray (Blackboard)
April 8	Bilingual Education Guest Speaker	Worthy et al (Blackboard) Bilingual Controversy http://www.edweek.org/context/topics/issuespage.cfm?id=8 Cross Cultural Analysis Final Paper Due
April 15	Multicultural Literature	http://www.readingonline.org/articles/art_index.asp?HREF=/articles/ernst-slavit/ Yokota (Opitz) Pang (Opitz) Worthy (Opitz) Response #5 Due Communication Proposals Due
April 22	Multicultural Education	Chapters 10 and 11 (Nieto) Jackson (Opitz) Moller (Blackboard) Group Literacy Unit Presentations
April 29	Final Reflection	Group Literacy Unit Presentations

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